Massachusetts Division of Health Care Finance and Policy

Massachusetts Health Care Trends: 1990-2005

Third Edition

September 2006

Mitt Romney, Governor
Commonwealth of Massachusetts

Timothy Murphy, Secretary
Executive Office of Health and Human Services

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Foreword

Two approaches—chronological and geopolitical—governed much of what is included in *Massachusetts Health Care Trends: 1990-2001*. We looked at our health care system in the broadest possible way and asked two basic questions: How has the system changed since 1990 and in what ways does it differ from the United States as whole?

"A Decade in Review" (see page 1), is an analysis of actual events whose meaning and significance in the larger picture is open to interpretation. We offer an interpretation that rings true to us from our vantage point, knowing that others will have different interpretations of the same events.

The body of the report is a chart book, an extensive set of graphs with explanatory bullets, some of which draw the reader's attention to related information in another section.

"Chapter 3: Health Care Delivery System" (see pages 33-62) includes information concerning the financial margins of hospitals, nursing homes and community health centers, but in the text we refer to the related financial margins of HMOs found in "Chapter 2: Health Care Financing" (see pages 19-32). Such distinctions between providers and financiers are somewhat arbitrary given the role-blurring that occurred over the last ten years (see page 2), but the reader is directed to related graphs when relevant.

The appendices include a reference list of hospital and HMO consolidations, and a timeline which provides a helpful chronological listing of events. As time passes and changes are institutionalized, it's often difficult to remember, for example, when the HEDIS data set measuring health plan performance was established (see page 82) or when Harvard Community Health Plan and Pilgrim Health Care became Harvard Pilgrim Health Care (see page 84).

Some who will read this report are primarily concerned with the health of the system, others with the health of institutions, and still others with the health of individuals. We hope that *Massachusetts Health Care Trends: 1990-2001* serves all equally well and that you will revisit it again and again.

A Word About the Division

The Division of Health Care Finance and Policy collects, analyzes, and disseminates information with the goal of improving the quality, efficiency, and effectiveness of the health care delivery system in Massachusetts. In addition, the Division administers the Uncompensated Care Pool, a fund that makes payments to Massachusetts acute care hospitals and community health centers for services provided to uninsured and underinsured people.

Satisfying the Need for Health Care Information

The effectiveness of the health care system depends in part upon the availability of information. In order for this system to function properly, purchasers must have accurate and useful information about quality, pricing, supply, and available alternatives. Providers need information on the productivity and efficiency of their business operations to develop strategies to improve the effectiveness of the services they deliver. State policy makers need to be advised of the present health care environment as they consider where policy investigation or action may be appropriate.

As part of its health care information program, the Division publishes reports that focus on various health care policy and market issues.

Mission

The Mission of the Division is to improve the delivery and financing of health care by providing information, developing policies, and promoting efficiencies that benefit the people of Massachusetts.

Our goals are to:

- assure the availability of relevant health care delivery system data to meet the needs of health care purchasers, providers, consumers, and policy-makers
- advise and inform decision makers in the development of effective health care policies
- develop health care pricing strategies that support the cost-effective procurement of high quality services for public beneficiaries
- improve access to health care for low-income uninsured and underinsured residents.

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Massachusetts Health Care Trends: 1990-2005

A Decade in Review

This "Decade in Review" is original to Massachusetts Health Care Trends: 1990-1999.

By almost any measure, the last ten years have been tectonic ones for health care in Massachusetts, leaving no industry sector untouched. Most observers would say these changes have left our health care institutions worse off than in 1990. Objective indicators, primarily financial, largely confirm that impression.

Exactly where were we in 1990? Were those really the good old days of health care? What were the seminal events that brought us to where we are in 2000? In what ways are we and our health care industry better off than in 1990?

Indicators and Paradigm Shifts

This report summarizes the past decade and shows how the current health care situation developed. We have selected important trends to tell the story. Most indicators show tremendous change but, remarkably, some look no different than in 1990. Many lend weight to the often-heard mantra, "Massachusetts is different" from the United States as a whole. Some simply reflect trends that occurred in our society, such as a widening of the income disparity between the highest- and lowest-earning families.

Many of the highlighted indicators interrelate in a loose cause and effect relationship that is rarely easy to see without the benefit of hindsight. The largest changes—paradigm shifts—cannot be adequately depicted in a graph or chart. Six such shifts best summarize the decade.

The States Tackle Health Care Reform

The first paradigm concerns the turn in attention from the federal to the state level for health care reform. In 1993, a new president set out to remake the health care system to address both rising health care costs and the rising number of uninsured. When efforts for reform collapsed at the federal level, action on these issues devolved to the states to a greater extent than in any previous time.

Many states passed legislation suited to their own demographics and political forces. In Massachusetts for example, one of the success stories of the decade is the substantial progress in decreasing the number of uninsured through Medicaid expansion, small group and individual insurance reform, and the Children's Health Insurance Program (a federally driven expansion but one inspired nationally by a Massachusetts reform, Chapter 203 of 1996). Today, states have assumed the reform role once associated with Congress and many people look to the states for leadership and incubation of ideas in health care.

HMOs Pushed the Market—and the Market Pushed Back

The second paradigm concerns Massachusetts HMOs that morphed from tightly

controlled exclusive networks to equal opportunity contractors, while their reputation in the general media faded from savior to villain. In 1990, there were high expectations that HMOs would not only retard the growth in health care spending but also correct many of the glaring faults of indemnity insurance.

Lost in today's incessant HMO bashing is the memory of paying out of pocket for well child care and adult preventive services, the patient's endless paperwork required for reimbursement, the systemic incentives for over-treatment, and the lack of payer oversight regarding the quality of services provided. Managed care has addressed, albeit imperfectly, these faults and others. It has also enabled the development of the fledgling science of outcomes measurement by virtue of its large databases and acknowledged role in "managing" care.

Indemnity insurers have a stake in ferreting out fraud and abuse but less standing and stake in measuring and improving care—an effort we now take for granted, but which was barely a whisper in 1990. It is no coincidence that the Institute for Health Care Improvement, incorporated in 1991, is based in Massachusetts, nor that its founder, Dr. Donald Berwick, was one of the early officers of Harvard Community Health Plan. The introduction of HMOs is inexorably linked to the spread of the outcomes measurement/quality improvement movement and is one of the triumphs of the 1990s.

But Massachusetts HMOs started the decade as insurers with restricted panels of contracted providers and ended the decade with nearly identical universal panels of providers. Their early promise to hospitals that, in exchange for deep discounts, the hospital would be one of only a handful to receive all of an HMO's admissions evaporated, as the plans capitulated to market pressure in an effort to buy market share. Consumers and their employers insisted on a dilution of the HMO network model to retain their historical choice to receive care anywhere—but at HMO level premiums.

In 1994, pharmacies across the state succeeded in passing "any willing provider" legislation which stipulated that HMOs had to contract with any pharmacy willing to meet their prices, and in 1997 Harvard Pilgrim Health Care lost a battle to New England Medical Center to maintain the right to exclude unneeded hospitals from its network. These two events signaled the end of selective contracting with deep discounts for volume, and the beginning of deep discounts for … nothing.

Health Care Players Acquire New Roles

The third paradigm shift of the decade is one of role blurring. No sector in 2000 is purely what it was at the onset of the decade. Provider, insurer, payer, purchaser, patient—we used to know what these were and could name an example of each.

Doctors and hospitals provided medical care but weren't at risk for its cost. That was the insurers' role before they also become known as providers who employed salaried doctors or owned hospitals and health centers. Employers were the insurers' clients on the commercial side until they took shelter in self-insurance—and their former insurers became simply their agent-payers.

Patients were, well, patients, until they became partners in their own health care, not to mention Internet investigators, medical error vigilantes, and pharmaceutical advertising targets. Medicaid used to be a payer until it saw its future in managed care and became a purchaser. And Medicare is juggling both payer and purchaser roles in an effort to hedge its bets, conserve its trust fund, and keep the political wrath of the elderly at bay.

A New Cosmology

The fourth paradigm concerns the role of hospitals as the centerpiece of our

system. Managed care, enabled by the twin forces of technology and pharmaceuticals, transformed the process of medicine and as a by-product, its principal site of care. Along the way, we learned that the Copernican model of health care with all entities revolving around the hospital, was no longer always necessary and, sometimes, not even preferable. Hospitals began to share the spotlight—and dollars—with many other sites. Handoffs of care, which used to refer to transferring patient information during a nursing change of shift, now commonly refers to transfers between types of providers—different institutions often with separate ownership speaking a different internal language and often operating under a different reimbursement incentive.

Hospitalizations and hospital days both decreased steadily from 1990 through 1996 (days continued decreasing through 1999) despite the aging of the population. Shorter lengths of inpatient stay, made possible by technology and pharmaceuticals, created a bulge in home health care (see Figure 3.9 on page 44) and prescription drug use (see Figure 3.10 on page 45). Today's fragmented care picture is a part of our landscape and presents challenges for professionals as well as patients.

To Regulate or Not to Regulate?

The fifth paradigm concerns the role of and regard for government involvement in health care in Massachusetts. The decade saw a shift away from strict rate setting to, lately, a call for a return to greater government involvement, particularly in HMOs. In 1990 Massachusetts was one of a handful of states with broad rate setting done centrally for its health care services but in 1991 a new Governor fought to "take the regulatory wraps off health care" and on September 30, 1991 the hospital rate setting authority expired, replaced in December, 1991 with Chapter 495.

Now, patient advocates as well as many industry experts are calling for a return to more involvement in health care by state government. This is widely seen as a backlash to the receivership of Harvard Pilgrim Health Care and the dismal fiscal condition of many Massachusetts hospitals, nursing homes and community health centers (See Figures 3.22, 3.23 and 3.24 on pages 57-59).

Oversight is more favorably regarded not only in financial matters but also in provider closings, sales of institutions to for-profit companies, scope of and access to services offered, and medical errors. Market forces, which were viewed as an aid in keeping costs down when most interested parties lobbied for a relaxing of regulation ten years ago, have proven to be unforgiving and overly destructive, especially when coupled with the force of the federal Balanced Budget Act of 1997.

Patients Become Clients

Finally, in ten years, an industry that used to be described as a service is now a business, its patients, now clients. In particular, many women who are the most frequent users of health care and by far the most frequent providers of familial caregiving, became disillusioned with the status quo even before the opening of the decade. Their dissatisfaction added voice to historically disenfranchised but less powerful groups such as the uninsured, linguistic and ethnic minorities and other marginalized populations such as homosexuals. Numerous and well-publicized examples of how ill-served these groups were sparked an effort to gain power in such areas as childbirth and AIDS care.

Strengthened by the sheer bulk of baby boomers experiencing the system en masse for themselves and their parents, these aroused consumers catalyzed a redefinition of the long-standing paternalistic patient-

physician relationship. Horrified in 1995 by the most widely publicized medical error in recent memory and astonished by where it occurred and to whom,* all consumers learned that health care is not immune to the errors of other industries, but the stakes are often higher.

Adding fuel to an already vital consumer movement, the Internet transformed information gathering and sharing in health care. It is estimated that as many as one in three patients who visits his or her doctor now brings information gathered from a health care Internet site. While still in its infancy, the Internet's potential for revolutionizing our health care system is obvious even as the exact dimensions of how that will happen are vague. As a tool with genuine promise to return significant cost savings, particularly in the area of administrative processes, it has already had the paradoxical effect of putting so much information in the hands of consumers that the pressure on providers to prescribe the latest drug or experimental treatment may in fact drive up medical costs in the short term.

While patients have become consumers, however, we have not accepted the central reality of most other consumer transactions—value costs money. We want indemnity-like choice, alternative medicine, the latest technology and cutting edge pharmaceuticals, futile or unproven treatments, conveniently located MRIs—all for a $5 copayment. Largely insulated from the price of these desires, we approach the next decade with our health care industry in jeopardy.

* Betsy Lehman, health writer for *The Boston Globe*, died and Maureen Bateman was seriously injured from a chemotherapy overdose at Dana-Farber Cancer Institute in 1994.

Chapter 1: Setting the Stage

This "Chapter 1" is original to Massachusetts Health Care Trends: 1990-1999.

Health care, together with education and computer technology, is what Massachusetts is known for throughout the world. We import students and patients and export college graduates, new doctors and healthier people. Health care is labor intensive and therefore, expensive. But, it provides jobs which are, in general, well-paying and accompanied by benefits, including health insurance. We capture a large portion of federal research dollars which are similarly beneficial to our economy and with them we invent technologies, pharmaceuticals, and processes that we export internationally. It's an important business to those who make a living within it, to those who live here and benefit first by its discoveries and to the rest of the world to whom its benefits soon accrue.

We are a small state, better educated than most, older, and more likely to be employed with higher per capita income than the rest of the nation. Massachusetts also has a higher proportion of Caucasians than the United States as a whole, but we are changing and benefiting from other racial and ethnic groups who invigorate the labor pool, challenge some of our ideas, and hopefully will further our tradition of excellence in health care.

The Importance of Health Care in Massachusetts

Demographic and Economic Profile

Massachusetts Health Care Expenditures and Percent of Gross State Product (1990-2000)

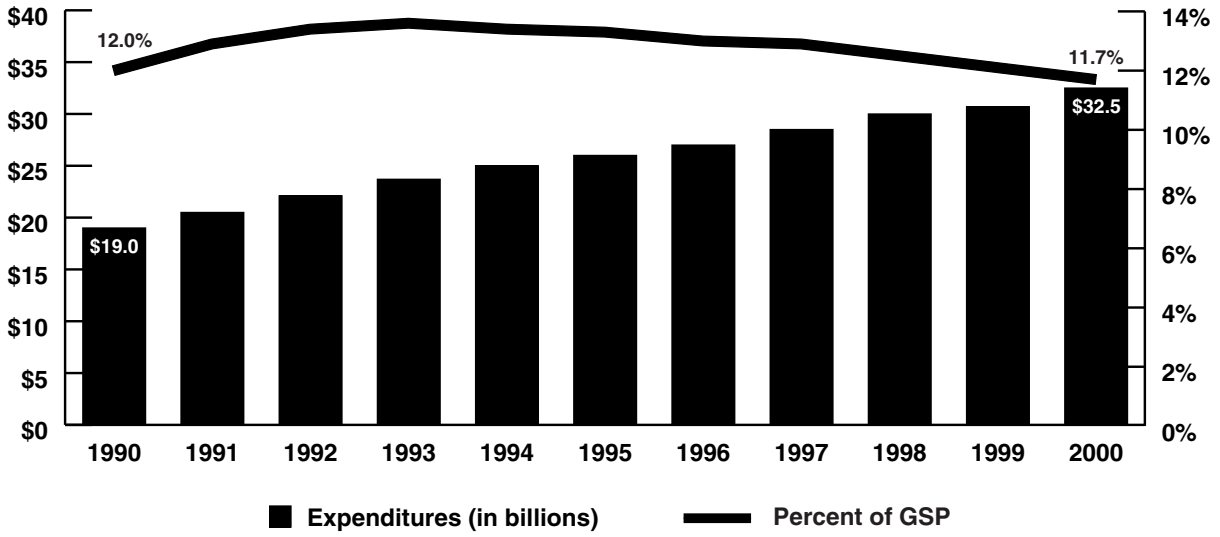


Figure 1.1

- Estimated total personal health care expenditures* in Massachusetts increased by 71% from $19.0 billion in 1990 to $32.5 billion in 2000. The average annual rate of increase was 5.5% between 1990 and 2000.

- The share of Gross State Product (GSP) accounted for by health expenditures rose from 12.0% in 1990 to the peak point of 13.6% in 1993. This GSP share gradually and consistently went down since 1993 and reached the bottom point 11.7% in 2000.

Sources: "Massachusetts Personal Health Care Expenditures (PHCE), All Payers 1980-2000" Centers for Medicare & Medicaid Services (CMS), Office of the Actuary, National Health Statistics Group http://www.cms.hhs.gov/statistics/nhe/state-estimates-provider/2000/states.pdf.

"Regional Accounts Data, Gross State Product," US Department of Commerce, Bureau of Economic Analysis, www.bea.doc.gov.

Levit, K. et al, *Health Care Financing Review,* "State Health Expenditure Accounts: Building Blocks for State Health Spending Analysis," Fall 1995.

Notes: CMS updates state-level health care expenditure data every five years.

These numbers have not been adjusted for inflation.

The specific health care expenditure measure used in this report is defined as personal health care expenditures (PHCE) in the State Health Expenditure Accounts (SHEA). This measure includes spending on therapeutic goods or services rendered to treat or prevent a specific disease or condition in a person, but leaves out some other spending categories, such as medical research and construction. The comprehensive total health care expenditure data at the state level are not currently available. All the monetary measures used in this report are not inflation adjusted.

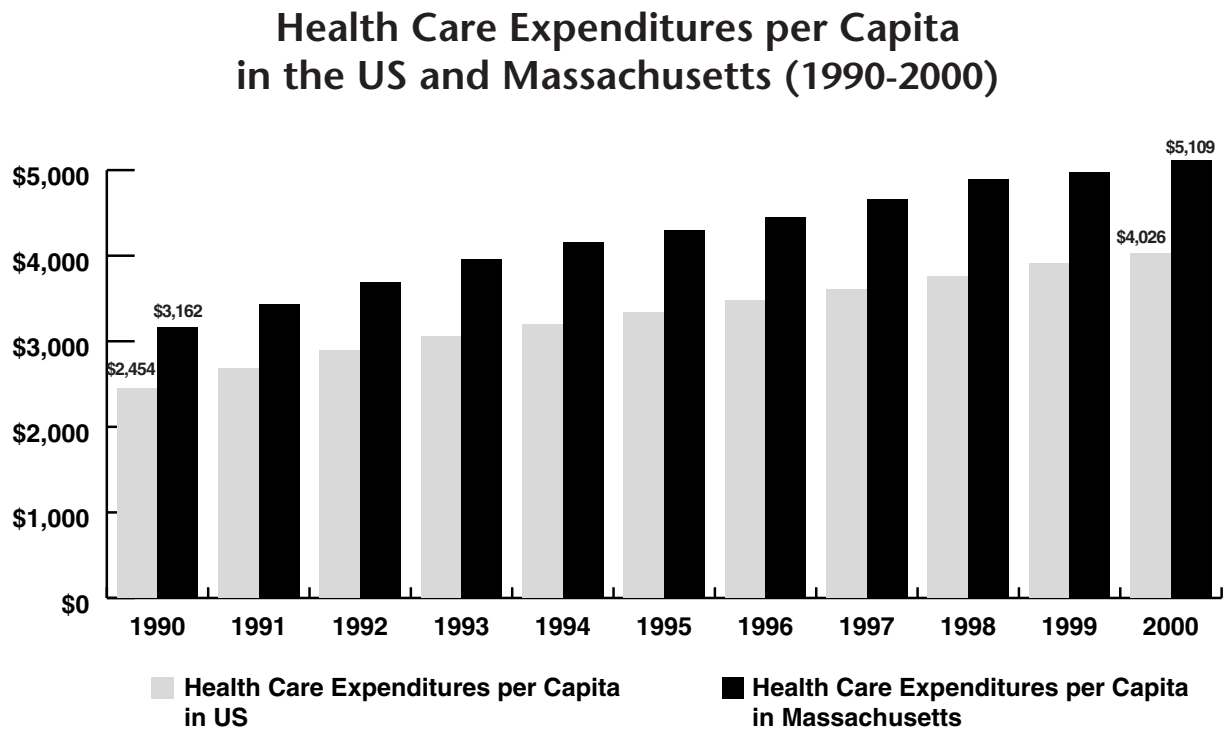


Figure 1.2

- Per capita health expenditures in Massachusetts were 27% higher than the national average in 2000, and 29% higher in 1990. The rate of increase in per capita health expenditures in Massachusetts was close to the US rate from 1990 to 2000—64% versus 62%. Therefore, the relative difference in this per capita expenditure measure between Massachusetts and the nation was fairly stable over this period.

Source: For Massachusetts personal health care expenditures see Figure 1.1.
For population data see Figure 1.6.
US personal health care expenditures: http://www.cms.hhs.gov/statistics/nhe/historical/t2.asp.

Notes: CMS updates state-level health care expenditure data every five years.
These numbers have not been adjusted for inflation.

Health Services Employment and Percent of Total Employment in Massachusetts (1990-2003)

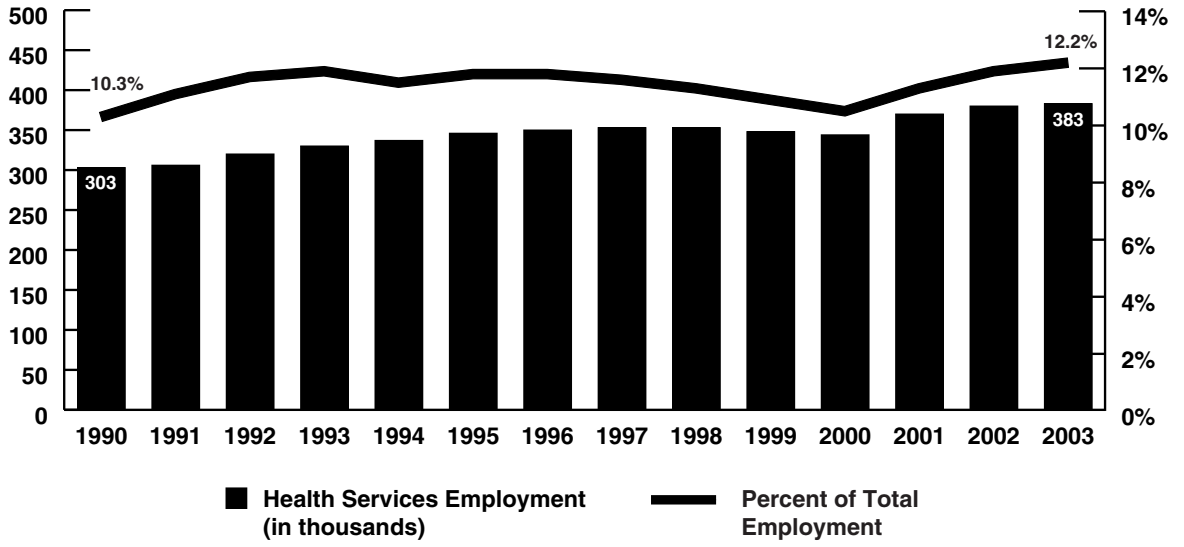


Figure 1.3

- Employment in the Massachusetts health services sector has steadily increased since 1990 from 302,679 employees in 1990 to 383,236 in 2003, an increase of 26.6%. The share of health care workers compared to total employees in the state was highest at 12.2% in 2003.

Source: Massachusetts Division of Employment and Training, www.detma.org

Note: The specific employment measure used in this report covers various health services fields in both private and public sectors, such as hospitals, physician offices, and long-term care facilities. This measure has left out some health care related employment, such as the health insurance industry, the drug and medical instruments industries, and biomedical companies. It is difficult to clearly identify these employment areas under the current statistical system.

NIH Funding and Its Share of Total Federal Research and Development Funding in Massachusetts (1990-2004)

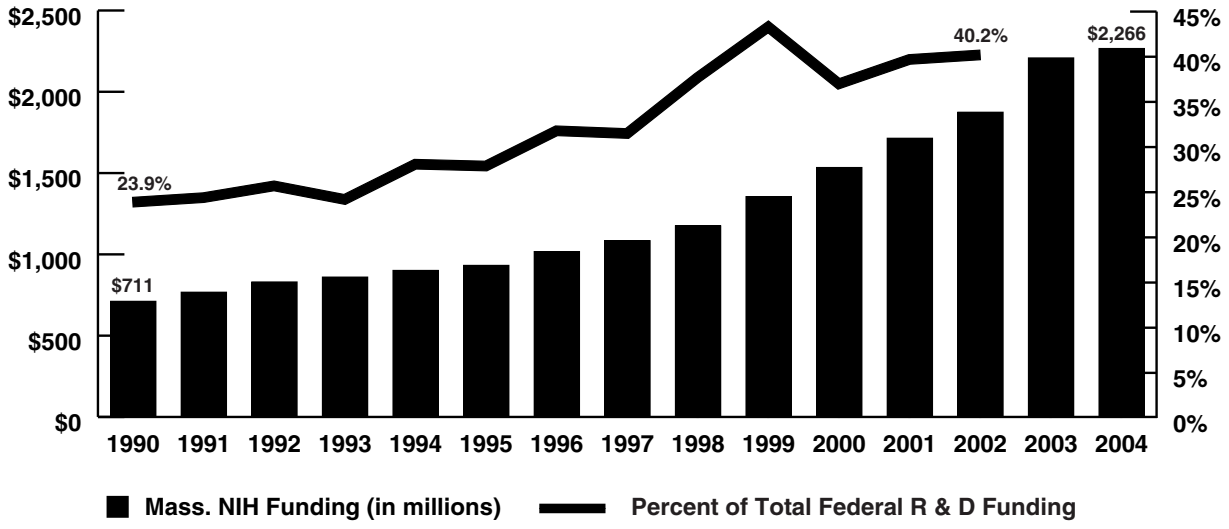


Figure 1.4

- Massachusetts received $2.3 billion in medical research funding from the National Institutes of Health (NIH) in 2004, 3.2 times the 1990 funding of $711 million. In 2004, Massachusetts trailed only California in the total dollar amount of medical research funding received from NIH ($3.6 billion in California) despite having a far smaller population.

- Of all the research and development funding received in Massachusetts from the federal government in 2002, NIH funding accounted for 40%, a substantial increase from 24% in 1990. NIH-funded research for universities and teaching hospitals provides important financial support for the health services, biotechnology, medical devices industries, and medical education in Massachusetts.

Source: National Institute of Health and National Science Foundation; 1990-1993 NIH funding data are estimated based on "NIH Support to the Top 100 Cities."

Note: These numbers have not been adjusted for inflation.

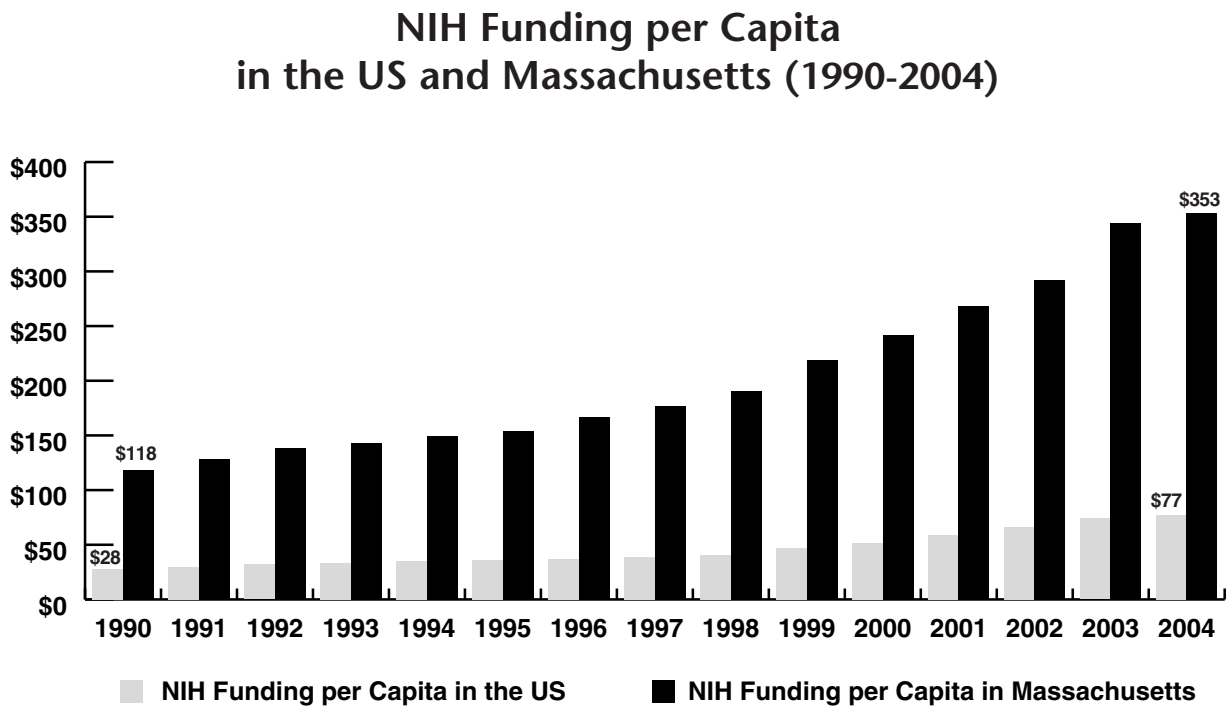


Figure 1.5

- NIH funding per capita in Massachusetts was far above the national average in 2004—4.6 times the national average. Per capita NIH funding for Massachusetts increased substantially—almost three times, from $118 in 1990 to $353 in 2004.

Source: National Institute of Health; 1990-1993 NIH funding data are estimated based on "NIH support to the Top 100 Cities," US Bureau of Census.

Note: These numbers have not been adjusted for inflation.

Massachusetts Population and Percent of US Population (1990-2004)

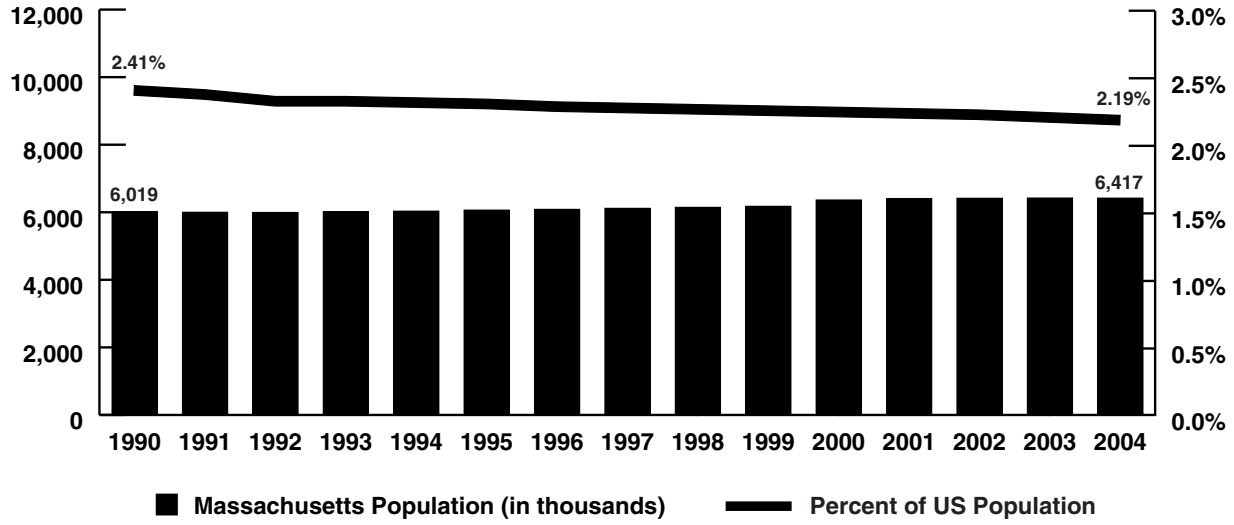


Figure 1.6

- Massachusetts experienced a population growth of 6.6% between 1990 and 2004, but was the only state to lose population in 2004. Since this growth rate was smaller than the national average, the proportion of the Massachusetts population relative to total US population diminished over this period.

- Massachusetts has almost exactly one fiftieth of the United States population.

Source: US Bureau of Census

Births and Deaths per 1,000 Population in the US and Massachusetts (1990-2002)

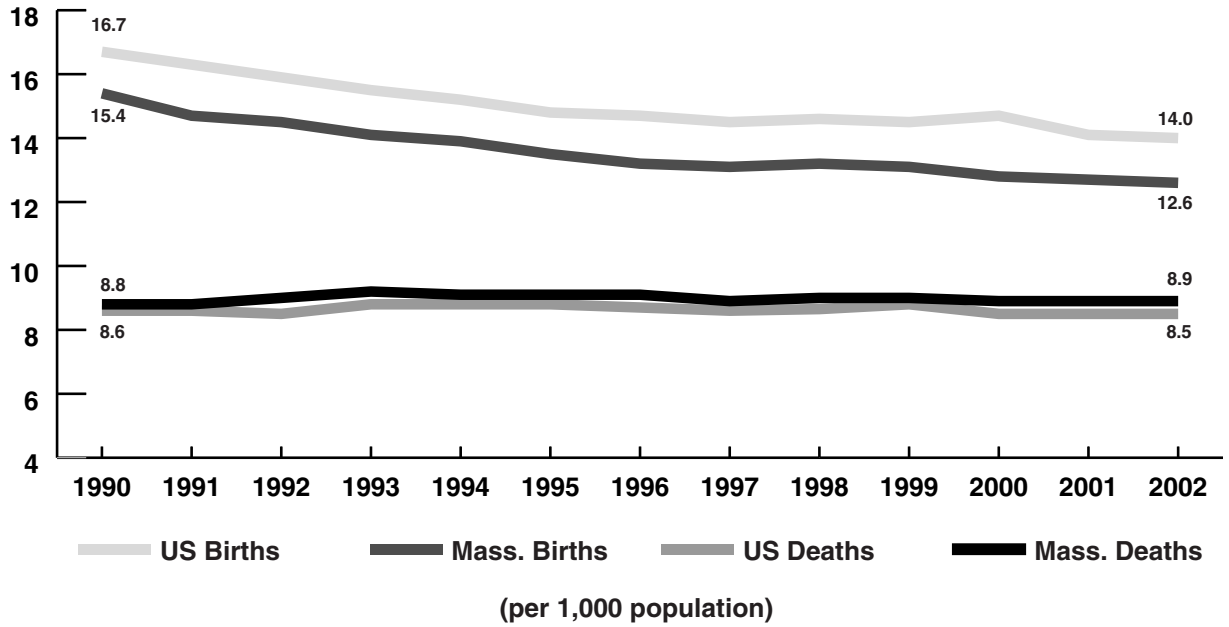


Figure 1.7

- Between 1990 and 2002 Massachusetts consistently had both a lower birth rate and a higher death rate than the rest of the country, which contributed to the lower population growth in Massachusetts compared to the national average.

Sources: *Health, United States* (various years), US Department of Health and Human Services.
Advance Data Births and *Advance Data Deaths,* Massachusetts Department of Public Health.
US Bureau of Census

Population Distribution by Age and Race in the US and Massachusetts (1990-2004)

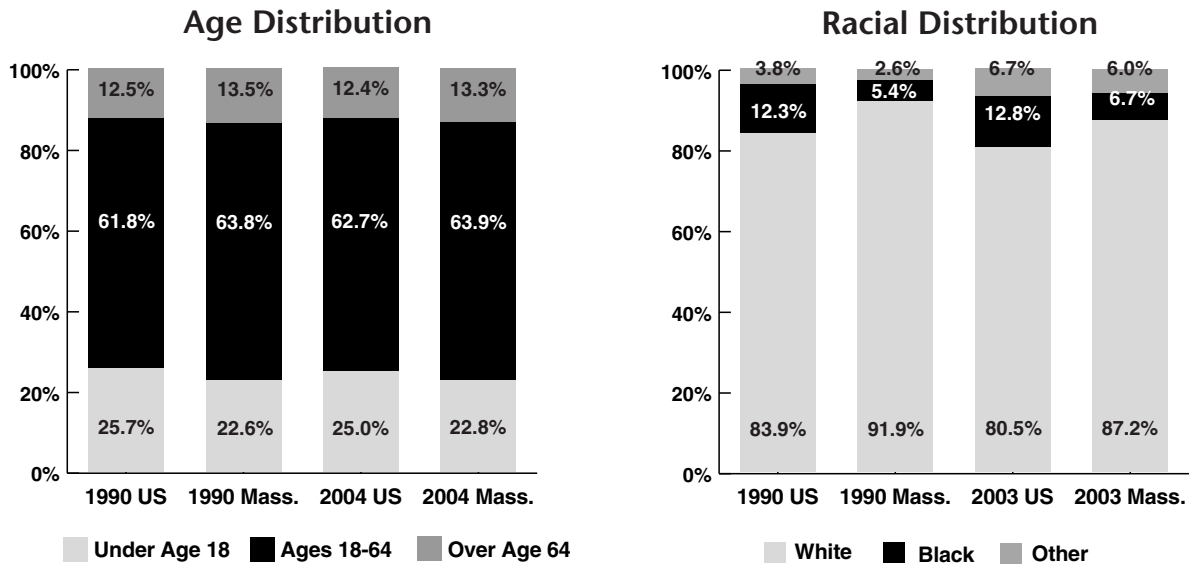


Figure 1.8

- The age distribution of the Massachusetts population has been fairly stable since 1990. The population under age 18 comprised a smaller share of the state population than the national average in both 1990 and 2004.

- Massachusetts had a significantly larger proportion of whites than the nation overall, but the Commonwealth's minority population increased slightly in all categories between 1990 and 2003.

Source: US Bureau of Census

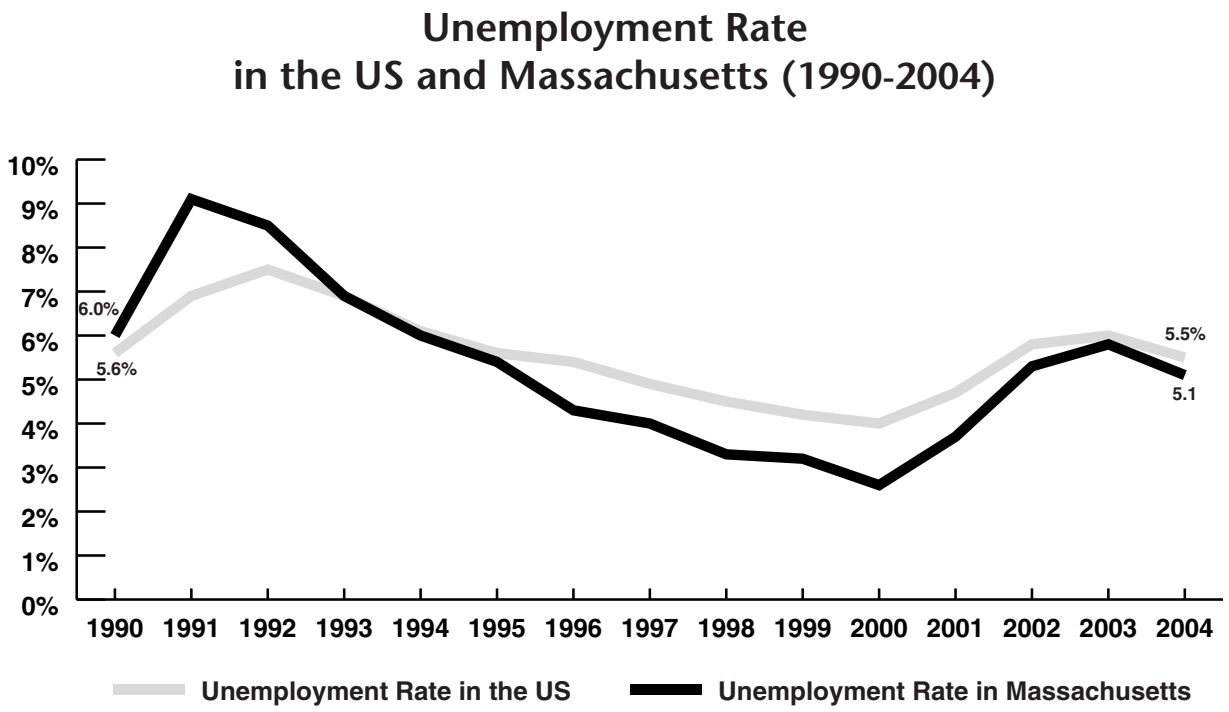


Figure 1.9

- The unemployment rate in Massachusetts followed the national trend between 1990 and 2004. It reached a peak of 9.1% in 1991 and went as low as 2.6% in 2000. In most years, the unemployment rate in Massachusetts was lower than the national average, but the difference between the US and Massachusetts rates has narrowed in recent years.

Source: US Department of Labor, Bureau of Labor Statistics

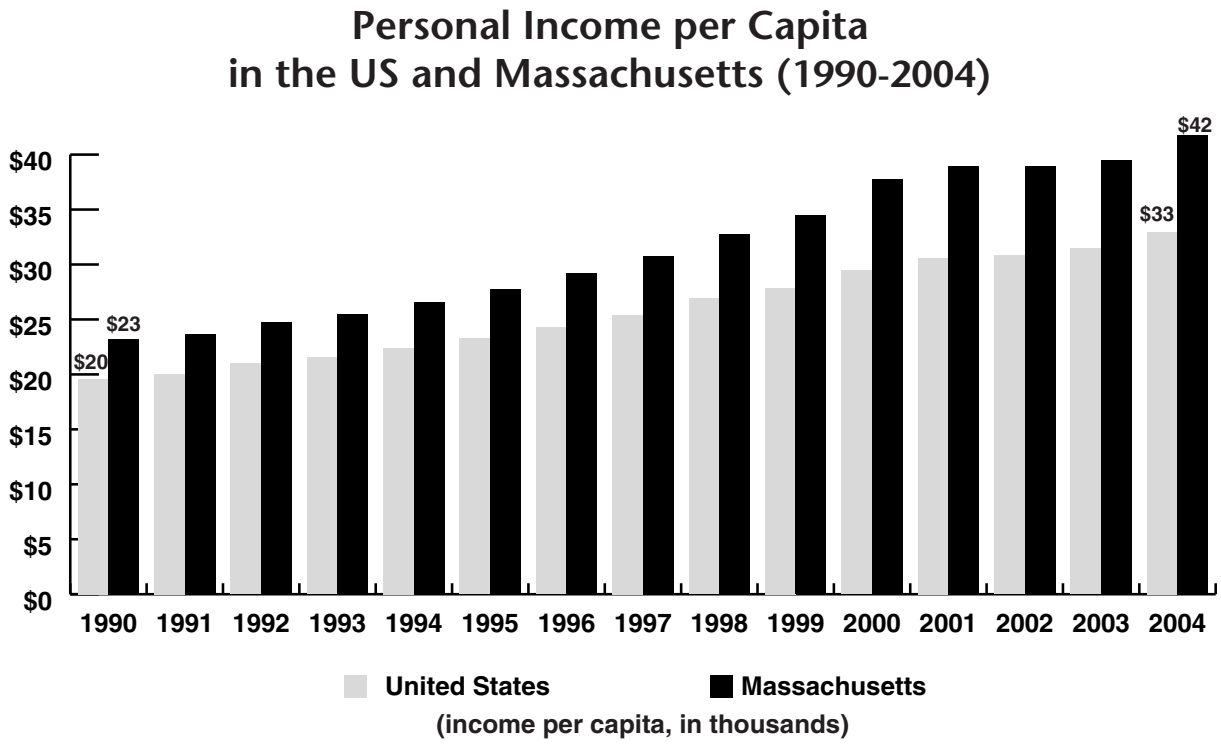


Figure 1.10

- Between 1990 and 2004, per capita personal income in Massachusetts rose gradually, resulting in an 80% increase. This rate of increase was higher than the national trend, which saw a 68% increase.

Source: US Department of Commerce, Bureau of Economic Analysis

Note: These numbers have not been adjusted for inflation.

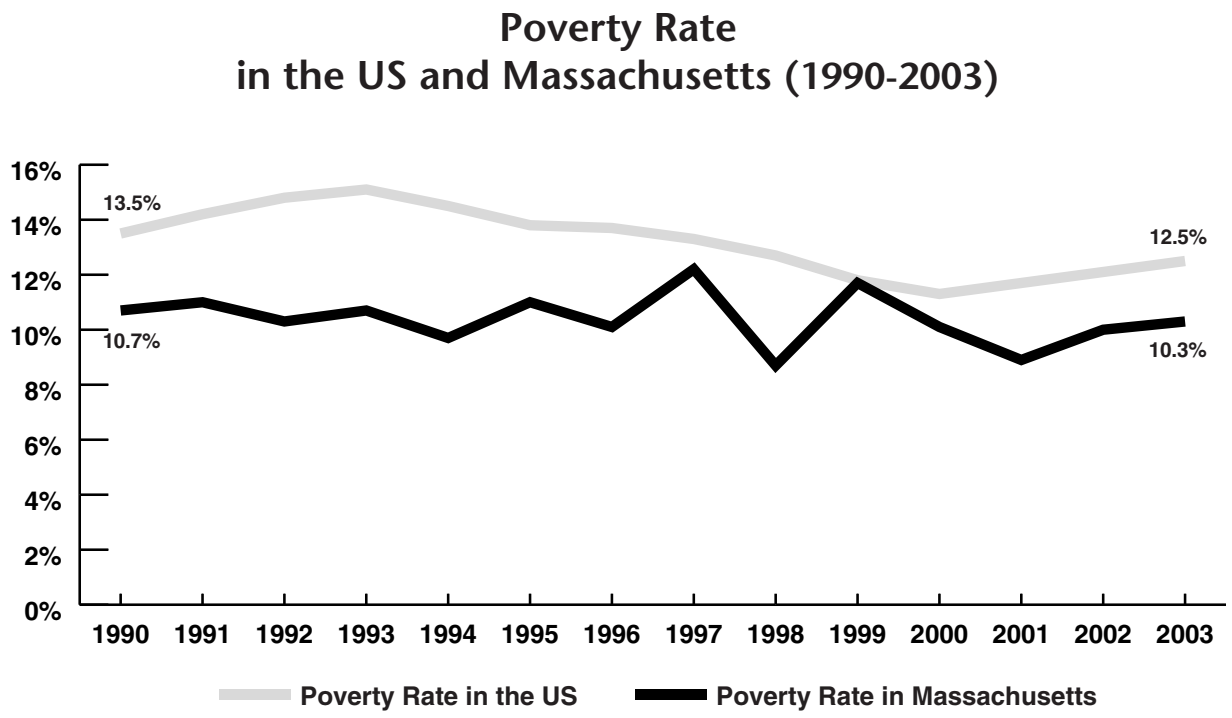


Figure 1.11

- Although the unemployment rate dropped substantially and personal income increased in Massachusetts during the 1990s, the Commonwealth's poverty rate did not show a substantial decline until 1998 (from 12.2% in 1997 to 8.7% in 1998) before climbing substantially in 1999.

- Massachusetts had a lower poverty rate than the national average between 1990 and 2003. However, the definition of federal poverty line is consistent throughout the US while the cost of living in Massachusetts is substantially above the US average.

Source: US Bureau of Census

Highest Level of Education Attained by Persons Ages 25 and Over in the US and Massachusetts (1991 and 2004)

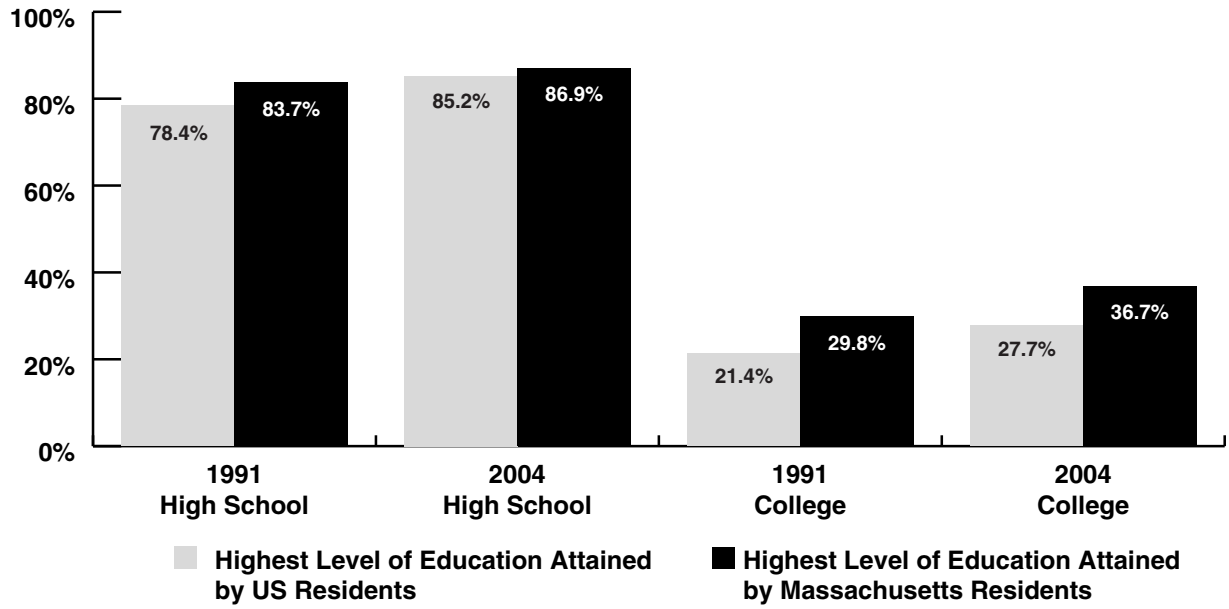


Figure 1.12

- In 1991 and 2004, the proportion of Massachusetts adults (ages 25 and over) who graduated from high school or college was higher than the national average.

Source: US Bureau of Census

Chapter 2: Health Care Financing

This "Chapter 2" is original to Massachusetts Health Care Trends: 1990-1999.

The United States is the only industrialized country that does not universally insure its citizens for health care. Those without insurance can usually still obtain care, but it may not be preventive, timely or optimal. Massachusetts has deliberately set out to expand the number of residents with coverage and throughout the decade has succeeded at having a lower rate of uninsurance than the United States as a whole. But even for those who are not covered, Massachusetts has an established mechanism for paying for free care at both community health centers and hospitals which serves as a last resort safety net.

With one of the highest HMO penetration rates in the country, the financial health of our HMOs is of great concern. When HMOs uniformly began to report losses in the late 1990s there was widespread fear that our uniquely not-for-profit HMOs might not survive or might change to for-profit ownership. Considering the dismal financial status of the various types of care providers, the financial distress of HMOs rounded out a picture of an industry in trouble.

Insurance premiums are said to fluctuate in cycles and after being kept artificially low in the late 1990s, while HMOs sought market share, they are once again rising. Harvard Pilgrim Health Care sunk into receivership in early 2000, and many acknowledged that premiums had to rise. The health care system must be adequately funded—and people must be able to afford insurance.

Health Insurance Coverage

Employment-Based Health Insurance

(continued on page 20)

Medicaid Enrollment

Managed Care

Percent of Non-Elderly Uninsured Residents in the US and Massachusetts (1990-2004)

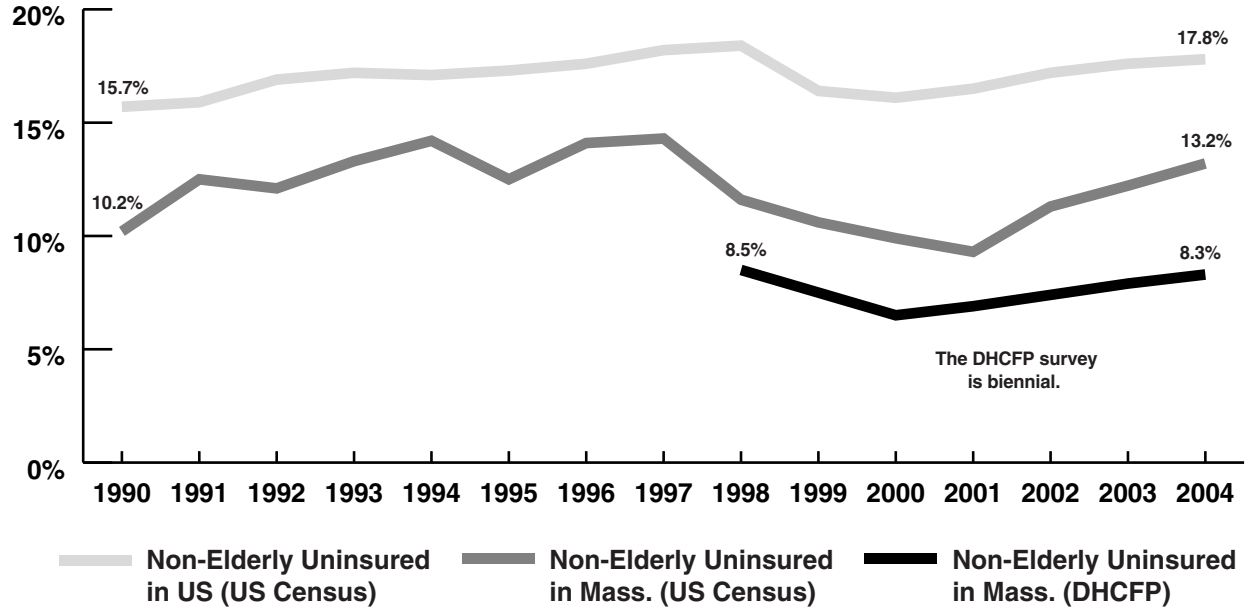


Figure 2.1

- According to US Census Bureau statistics, the proportion of Massachusetts residents who are uninsured is consistently well below the national rate.
- In 1998, the Division of Health Care Finance and Policy initiated a statewide survey of the health insurance status of state residents, replicated on a biennial basis. For a number of reasons, DHCFP data reports a lower number of uninsured; it is widely agreed that the US Census data overestimates the number of uninsured.

Sources: "Health Insurance Coverage Status and Type of Coverage by State, Persons Under 65: 1987-1998," Table HI-6, US Bureau of Census; Survey of Health Insurance Status of Massachusetts Residents, 1998 and 2000, Division of Health Care Finance and Policy; "Persons under 65 Years of Age without Health Care Coverage, by State: US, Selected Years 1987-2000," Health United States, 2002, US Department of Health and Human Services

Notes: The DHCFP survey is biannual. The US Census methodology in 2000 changed slightly for both the count of US uninsured and its Massachusetts breakout of uninsured.

Number of Uninsured Acute Hospital Discharges and Percent of All Massachusetts Discharges (1990-2004)

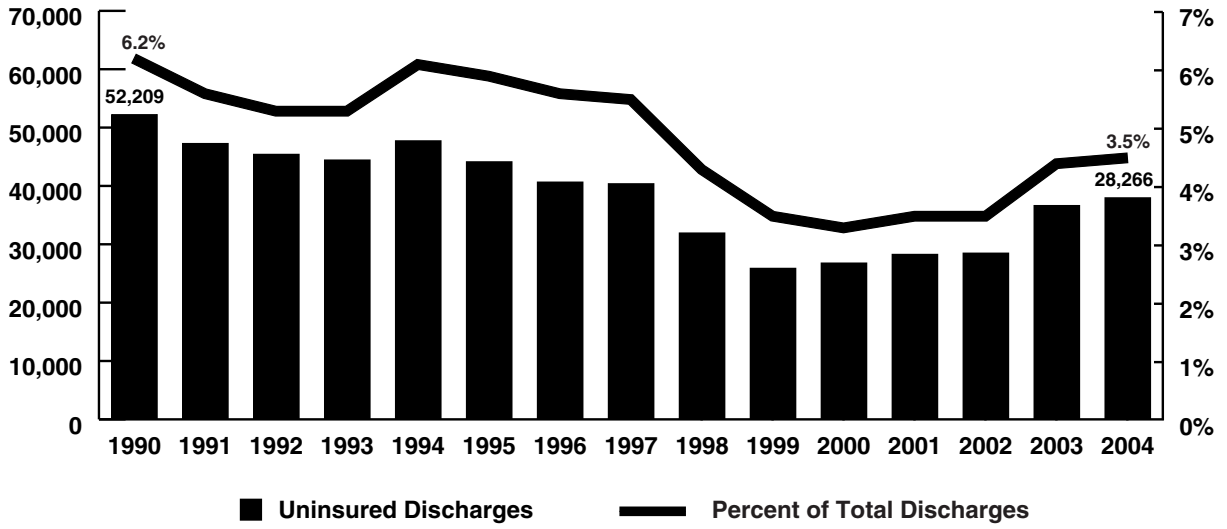


Figure 2.2

- During the 1990s, the number of uninsured acute hospital discharges decreased by almost 50%, but trended upward in 2001, as did the uninsured share of total discharges.

Source: Hospital discharge data, Massachusetts Division of Health Care Finance and Policy
Note: Uninsured includes self-pay and free care payer categories.

Allowable Cost and Actual Payment to Hospitals and CHCs for Uncompensated Care in Massachusetts (1990-2004)

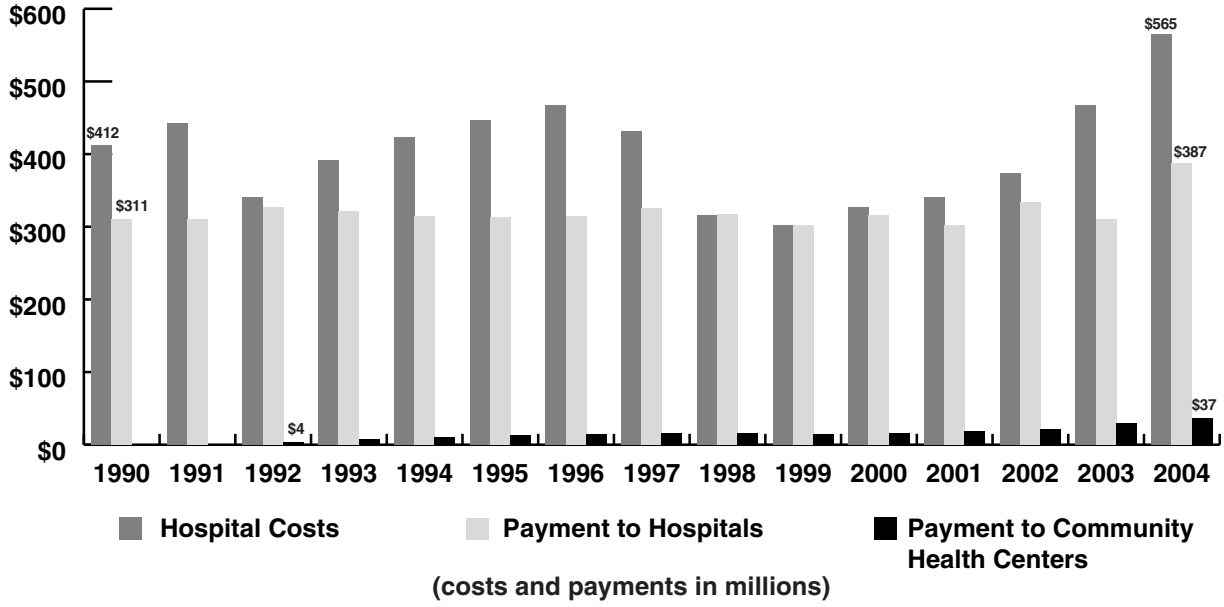


Figure 2.3

- The Massachusetts system for funding uncompensated care relies on several revenue sources: an assessment on acute hospitals' private sector charges, a surcharge on payments made to hospitals and ambulatory surgical centers by payers, and an annual appropriation from the Commonwealth's General Fund.

- As a result of policy changes in the financing and management of the Uncompensated Care Pool, as well as expansion in state supported health care coverage programs, the Pool was funded adequately from 1998 to 2000 to cover all charges to it. Prior to 1998, and again in 2001, uncompensated care charges were greater than the dollars available to fund such care, resulting in a shortfall.

- Since 1992, the Uncompensated Care Pool has paid community health centers (CHCs) for the uncompensated care they provide. Unlike hospitals, the Pool pays CHCs based on a standard fee schedule. Also unlike hospitals, CHC payments from the Pool are not reduced when there is a shortfall in Pool funds, therefore, there is no difference between allowable costs and payments for CHCs as there is for hospitals.

Sources: *Uncompensated Care Pool PFY01 Annual Report*, August 2002 and "Community Health Center Payment Voucher Supplemental Form," Massachusetts Division of Health Care Finance and Policy
Note: These numbers have not been adjusted for inflation.

Number of Mandated Health Insurance Benefits in the US and Massachusetts (1990 and 2001)

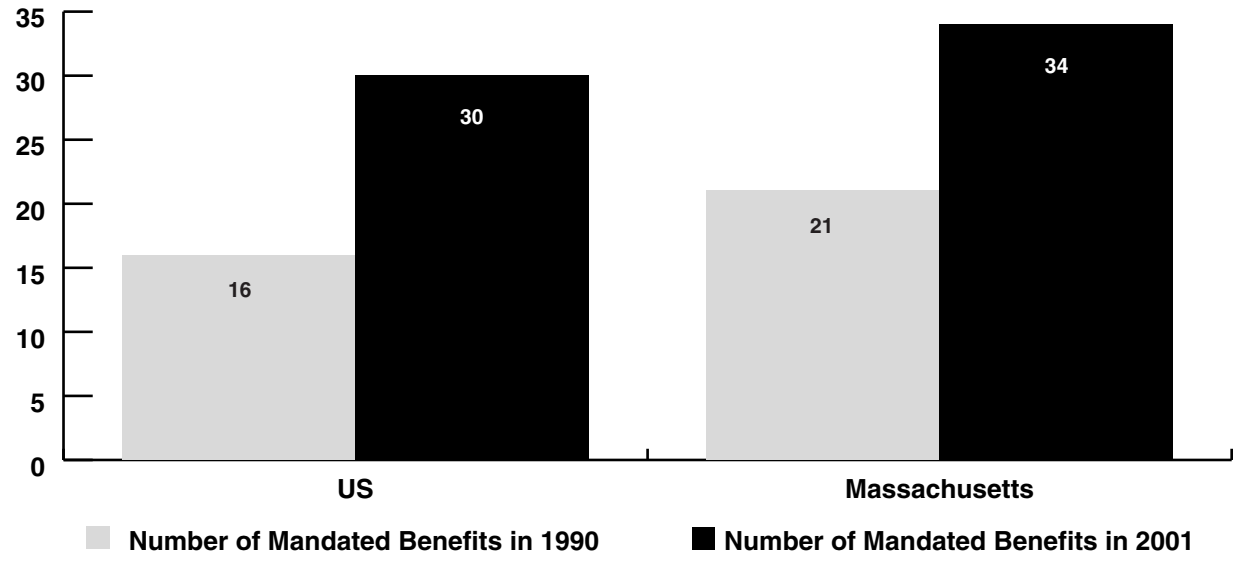


Figure 2.4

- All 50 states have laws requiring employers that offer group health plans to include minimum specific benefits, although, according to federal law, these mandates do not apply to self-funded ERISA plans, primarily offered by large companies.
- The number of mandates alone, however, is not an indicator of premium costs. Some benefits add more cost to premiums than others.
- Mandated health benefits offer the advantage of ensuring that individuals with insurance have access to coverage for specific benefits. A disadvantage is that benefit mandates may increase the cost of insurance coverage, thereby possibly raising the number of uninsured.

Source: *State Legislative Health Care Insurance Issues: 2001 Survey of Plans,* Blue Cross Blue Shield Association

Percent of Non-Elderly with Employer-Based Health Insurance in the US and Massachusetts (1990-2004)

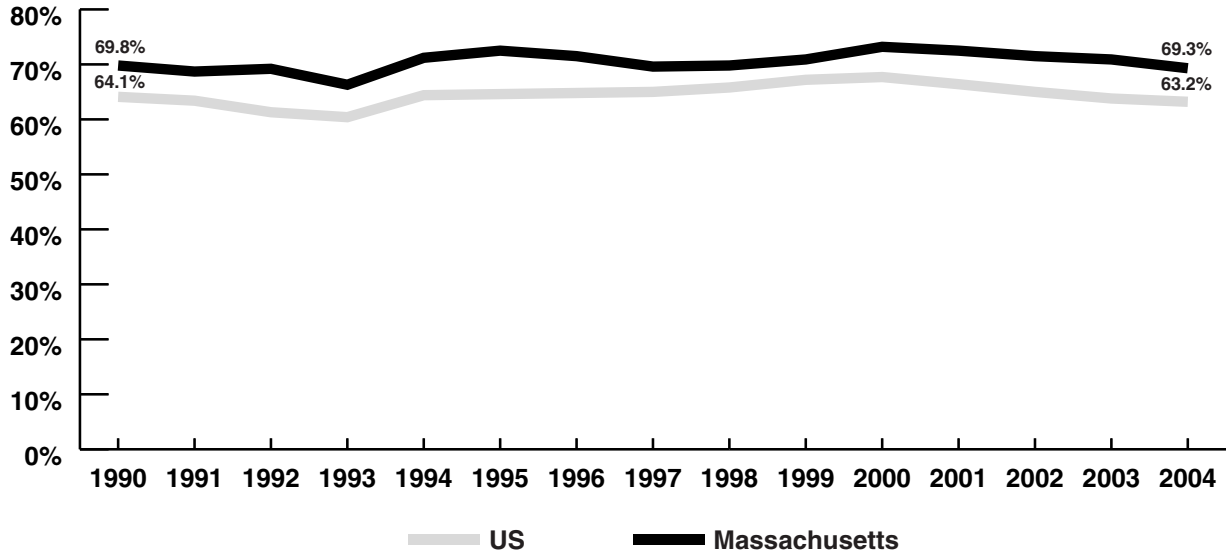


Figure 2.5

- Throughout the decade, Massachusetts had a larger proportion of its population covered by employer-based health insurance than the rest of the nation.

- The higher rate of employer-sponsored health insurance in Massachusetts is associated with its larger-than-average-sized employers, higher-than-average per capita incomes, higher-than-average union penetration, and a lower-than-average number of service jobs in the state economy.

Source: "Health Insurance Coverage Status and Type of Coverage by State, Persons Under 65: 1987-2000," Table HI-6, US Bureau of Census

HMO Premiums, Medical Inflation and General Inflation in the US and Massachusetts (1990 and 2000)

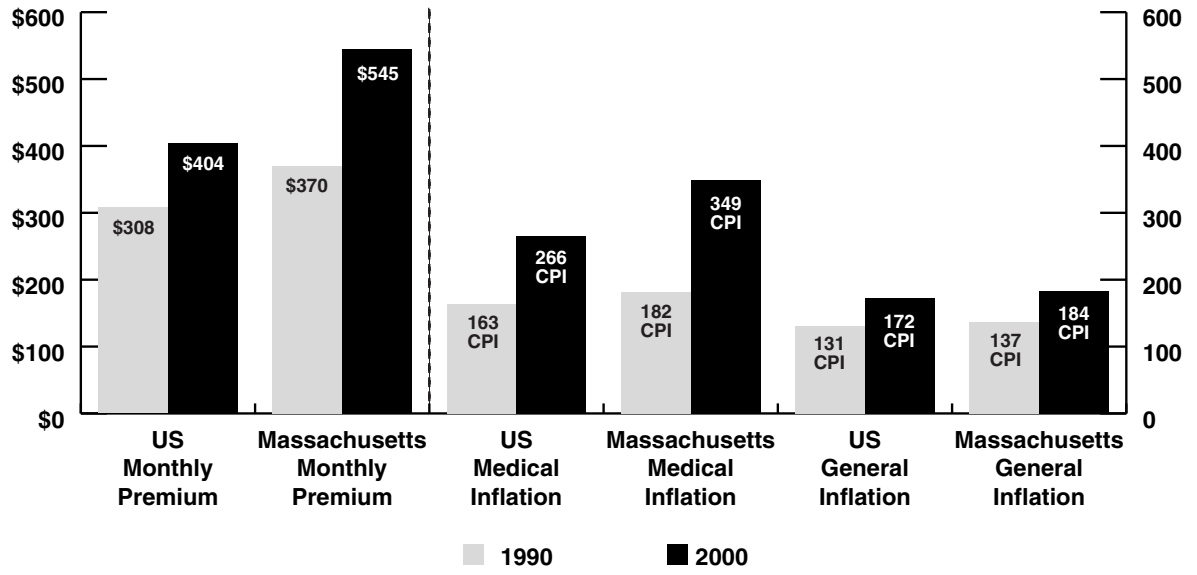


Figure 2.6

- The average (of family and individual rate) monthly Massachusetts health insurance premium increased significantly more (47%) than that of average premiums throughout the country (39%), but significantly less than the rate of medical inflation in Massachusetts (92%).

- Throughout the decade, general inflation in Massachusetts (34%) was similar to that of the US as a whole (32%); medical inflation in Massachusetts was significantly higher than medical inflation in the US (92% versus 63%).

Sources: *Health, United States, 2001*, US Department of Health and Human Services; *HMO Rate Analysis: 1998 Spending, Unit Cost and Utilization* and *Premium Trends for Six HMOs in Massachusetts: 1990-1994,* Massachusetts Division of Health Care Finance and Policy; *Statistical Abstracts of the US* (Boston, Massachusetts, only), US Bureau of Census
Note: These numbers have not been adjusted for inflation.

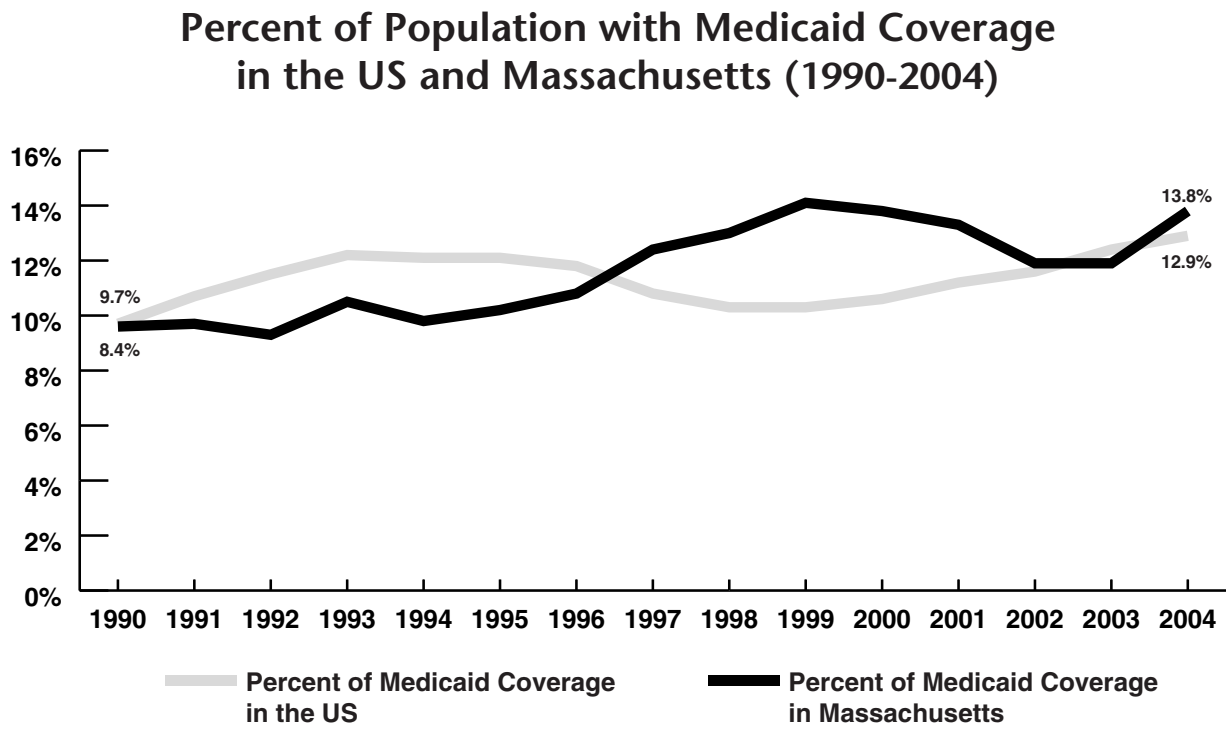


Figure 2.7

- Between 1990 and 2000, the number of Medicaid enrollees in the state rose considerably due to deliberate expansion and successful outreach by MassHealth. Policy changes in 1997 that promoted increased Medicaid enrollment in Massachusetts included the approval of a federal 1115 waiver demonstration project and the implementation of Children's Health Insurance Program (CHIP), which became a model for the rest of the country.

- Between 1990 and 2000, national Medicaid enrollment increased slightly, having peaked at 12.3% of the population in 1993. National welfare reform, enacted in 1996, lowered Medicaid enrollment, although many former welfare recipients are still legally entitled to Medicaid benefits.

Source: "Health Insurance Coverage Status and Type of Coverage by State, All Ages: 1987-2004," Table HI-6, US Bureau of Census

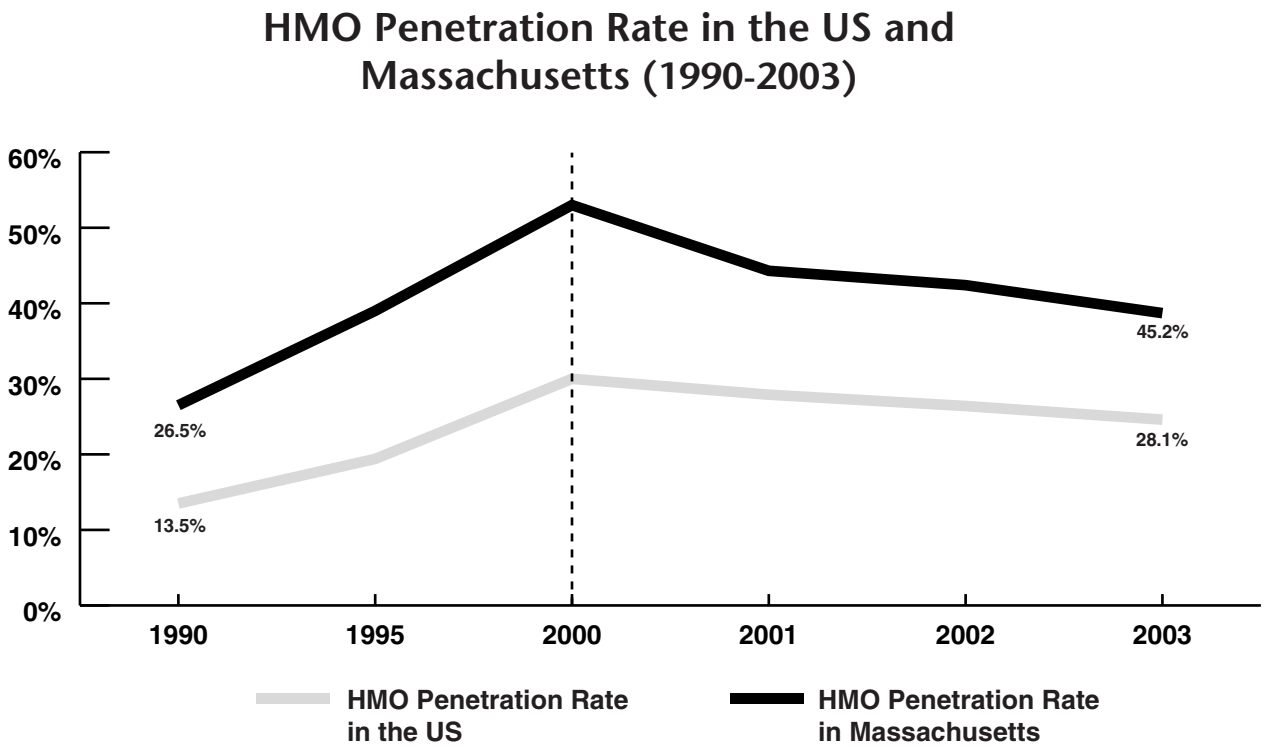


Figure 2.8

- Massachusetts continues to have significantly higher rates of HMO penetration rate than the nation, although the downward trend mirrors the rest of the country.

Source: *Health, United States, 2004: With Chartbook on Trends in the Health of Americans*, "HMO Penetration Rate is the US and Massachusetts" (Table 152). National Center for Health Statistics. Hyattsville, Maryland: 2004.

Managed Care Penetration Rate of the Medicare Population in the US and Massachusetts (1990-2001)

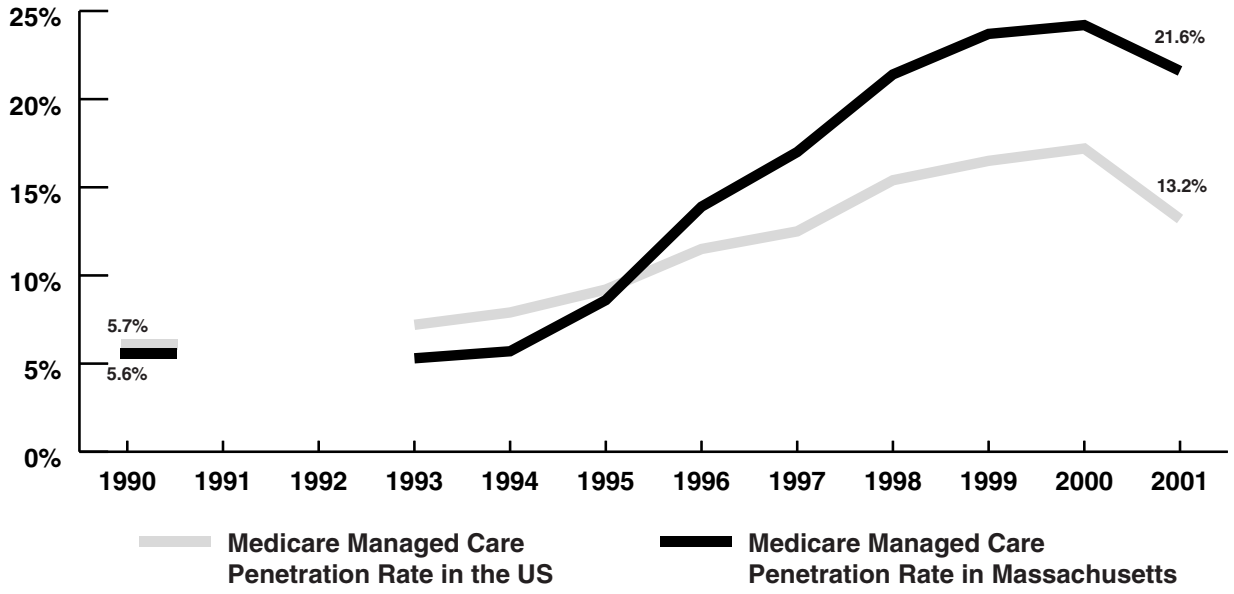


Figure 2.9

- Following the pattern set by the commercial population, the managed care penetration rate for Medicare enrollees is higher in Massachusetts than the national average and has been consistently higher since 1996.

Sources: *Reforming the Health Care System: State Profiles* (1990-2001), American Association of Retired People (AARP); *Health, United States, 1999,* US Department of Health and Human Services; www.cms.hhs.gov/healthplans/statistics/mpscr, September 2001/SC-0902
Note: Complete data were unavailable for 1991 and 1992.

Managed Care Penetration Rate of the Medicaid Population in the US and Massachusetts (1990-2004)

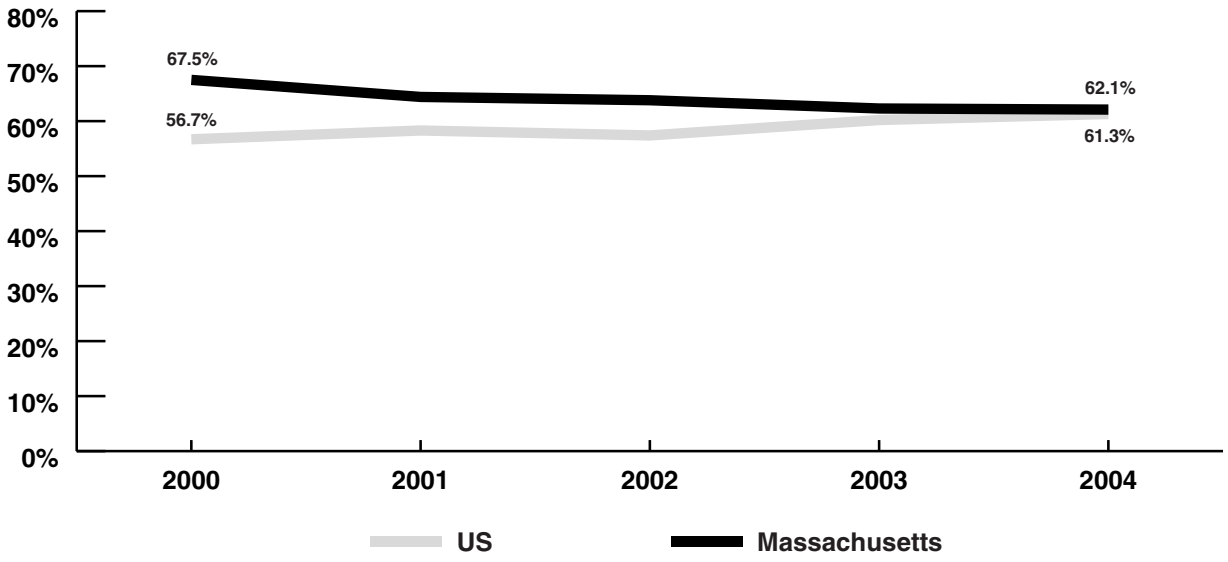


Figure 2.10

- Massachusetts Medicaid managed care penetration has declined in recent years and is now nearly the same as the United States as a whole.

Source: http://new.cms.hhs.gov/MedicaidDataSourcesGenInfo

Chapter 3: Health Care Delivery System

This "Chapter 3" is original to Massachusetts Health Care Trends: 1990-1999.

In many significant ways the health care delivery system in Massachusetts does not look like it did in 1990. The roles of the various stakeholders have blurred over the decade. Health care services are now less institutional, but more aligned into systems and care is dominated by a few huge players on both the finance side and the provider side. Among providers there was almost a Copernican revolution displacing hospitals as the perceived center of the universe, leaving in their place a number of different, usually less acute facilities. Hospitals are now used to provide more costly, intense services in shorter lengths of stay than ever before.

Hospitals, nursing homes and community health centers all experienced closures and system consolidation and ended the decade with fewer acute beds and buildings. In this industry as in so many others, bigness in one sector (i.e. insurers), begets bigness in others (hospitals, nursing homes, community health centers, physician groups) as a way to counterbalance power and achieve efficiencies, but such benefits are often elusive as many found out by the close of the decade.

The composition of clinicians is changing as well. Data show that newly trained physicians are more likely to go into primary care than their predecessors but still not as likely as their counterparts throughout the United States. Massachusetts remains specialist heavy even as managed care tries to put primary clinicians at the center of a person's care.

The financial story of the three main types of institutional providers is troubling and Figure 2.10 on page 30, Median HMO Profit Margin, rounds out the picture. While somewhat different forces or actions hurt each of them, together they illustrate an under-funded system at risk of or already beginning to unravel.

Although certainly not the only factor explaining poor financial margins, pharmaceutical costs were selected to illustrate the mixed gift of every major advancement in health care. Per capita drug costs have exploded, but advancements in pharmacology have partially enabled our decreased dependence on hospitalization. Does one cost offset the other savings? If not, what is an equitable financing mechanism?

Health Care Resources

Systemic Changes

Utilization of Institutional Care

Financial Status

Pharmaceutical Costs

Number of Acute Hospitals and Available Beds in Massachusetts (1990-2004)

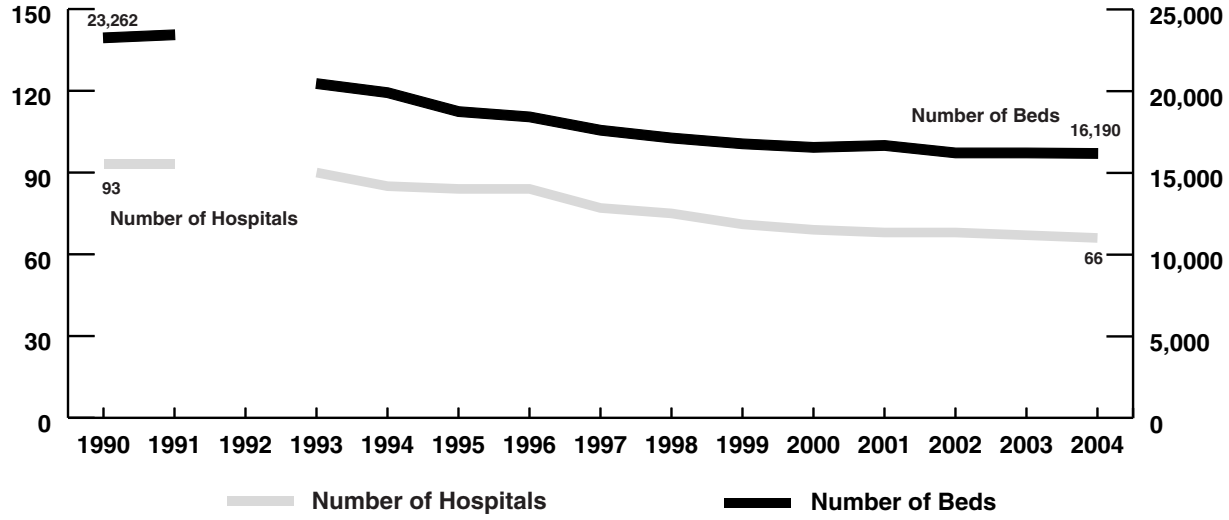


Figure 3.1

- Market forces, changing health care financing, and changing service delivery practices have led to dramatic changes in the Massachusetts hospital infrastructure. The total number of acute care hospitals fell 29% from 93 to 66; the number of available beds also dropped significantly.

- Since the Massachusetts population changed only slightly during this time period, beds per capita decreased significantly.

Source: "Hospital Statement for Reimbursement, DHCFP 403," Massachusetts Division of Health Care Finance and Policy
Note: Complete data were unavailable for 1992. Beginning in 2001, the methodology for counting Massachusetts hospital beds changed slightly—it measured "weighted average available beds" instead of "weighted average operational beds" —slightly compromising the comparability to prior years.

Massachusetts Acute Hospitals Currently Operating (2006)

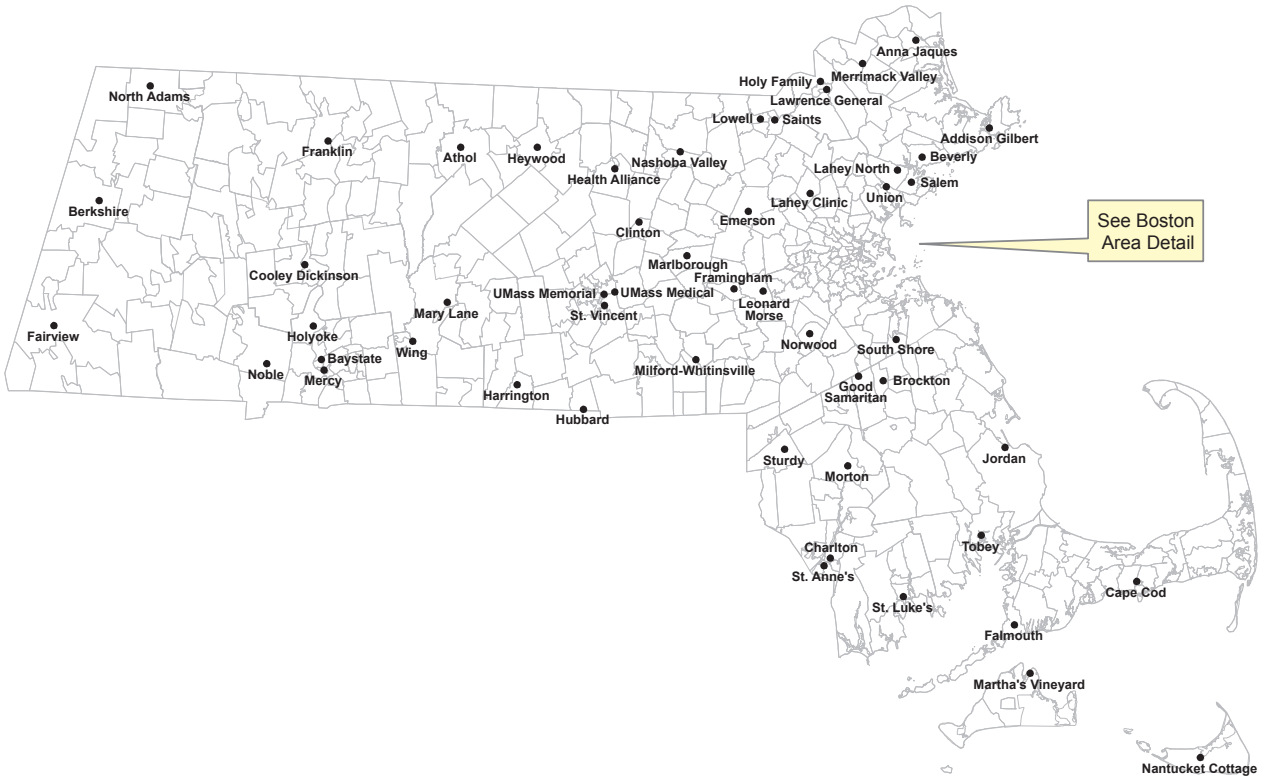


Figure 3.2A

- For the chronology of hospital closures and conversions, see Appendix IV: Acute Hospital Full Asset Mergers, page 89; Appendix V: Hospital Closures as Acute Inpatient Facilities, page 91; and Appendix VI: Hospital Acquisitions, page 93.

Sources: Massachusetts Division of Health Care Finance and Policy

Boston Area Acute Hospitals Currently Operating (2006)

Figure 3.2B

- For the chronology of hospital closures and conversions, see Appendix IV: Acute Hospital Full Asset Mergers, page 89; Appendix V: Hospital Closures as Acute Inpatient Facilities, page 91; and Appendix VI: Hospital Acquisitions, page 93.

Sources: Massachusetts Division of Health Care Finance and Policy

Number of Nursing Homes and Number of Licensed Beds in Massachusetts (1990-2005)

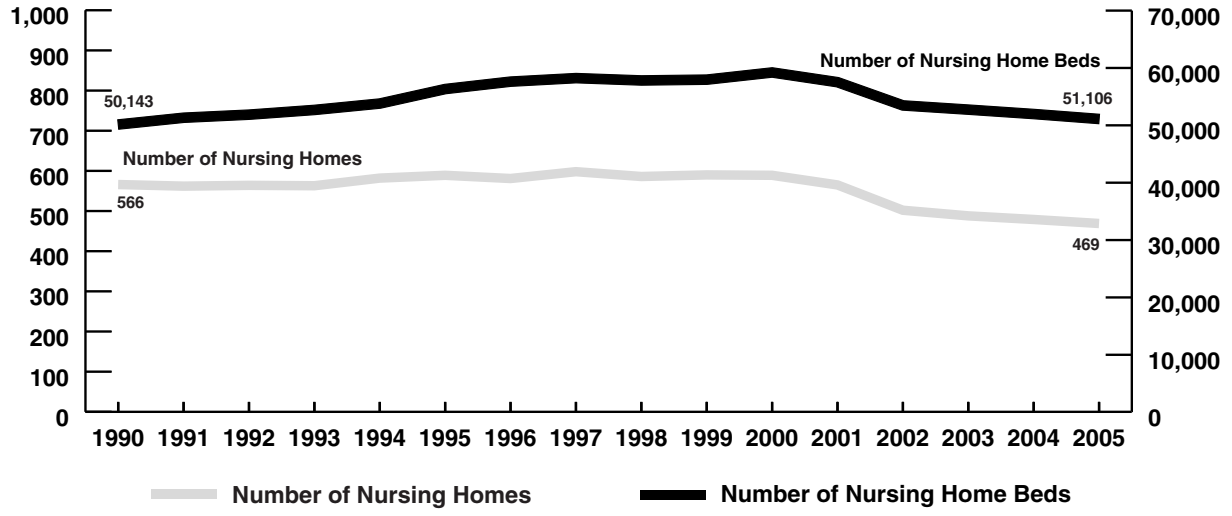


Figure 3.3

- The number of nursing home beds rose 15% between 1990 and 2000; however, since 2000 both the number of nursing homes and the number of licensed beds have steadily declined each year.[1]

Source: Massachusetts Department of Public Health, Division of Health Care Quality
Note: Number of licensed (but not necessarily operational) beds.

Number of Community Health Centers and Total Visits in Massachusetts (1990 and 2000)

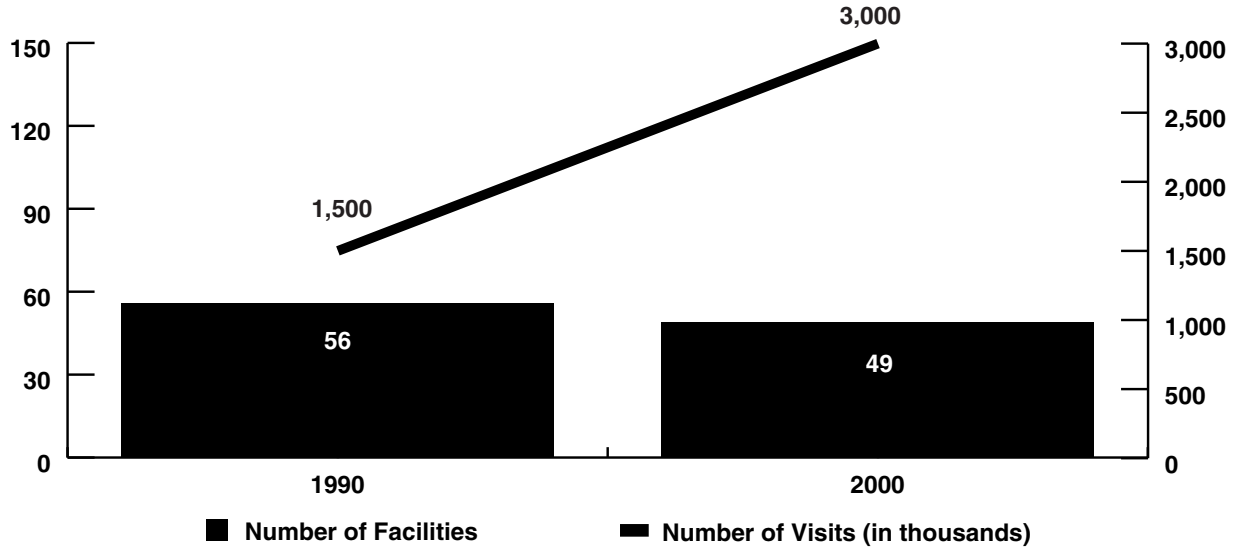


Figure 3.4

- Like the trend experienced by hospitals (see Figure 3.1 on page 33), the number of CHCs declined from 56 to 49 during the 1990s, a decrease of 13%.
- Total CHC patient visits doubled from 1.5 to 3 million visits, paralleling the steep incline in hospital outpatient visits experienced during this time period (see Figure 3.13 on page 46).

Sources: *MA CHCs in Crisis: Facts, Trends, and Strategic Solutions for Investing in the Safety Net, 2000, 2002* and *Transitional Issues Report*, January 1991, Massachusetts League of Community Health Centers

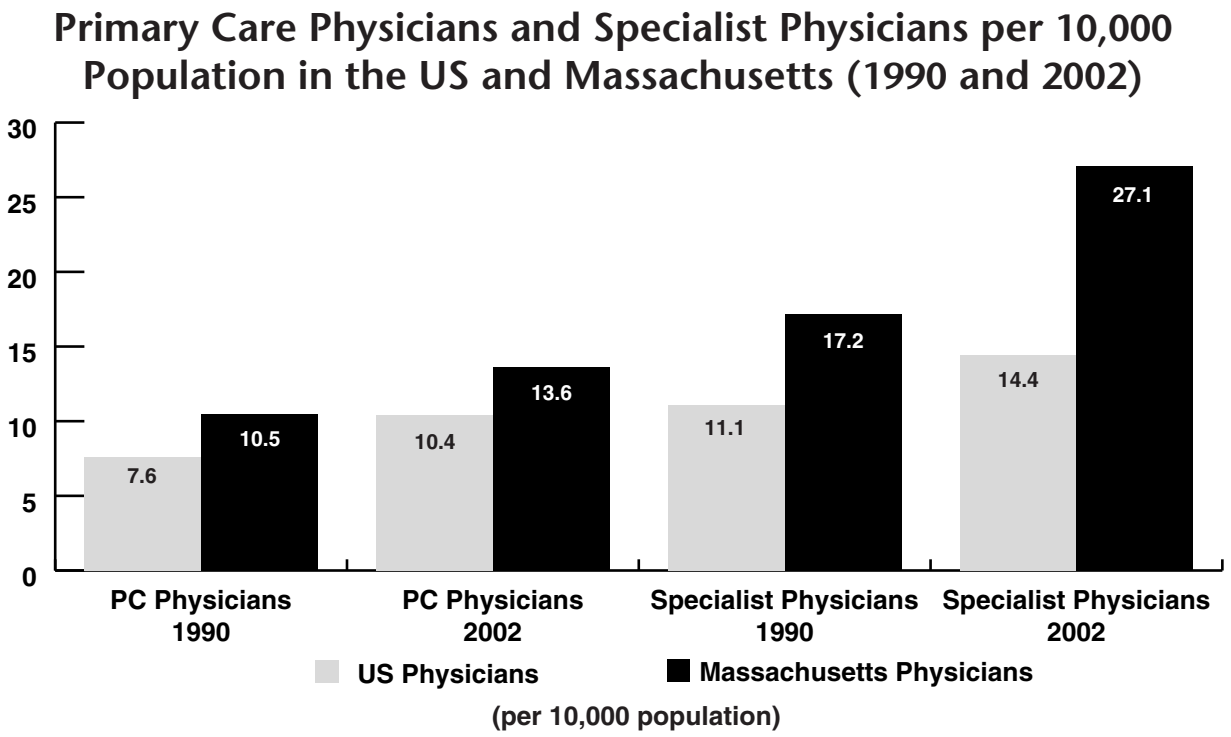


Figure 3.5

- In both 1990 and 2002, Massachusetts had more physicians per 10,000 population than did the nation overall, particularly specialists.
- The strong presence of specialists in Massachusetts has not decreased, even as managed care has tried to shift much care to primary clinicians, and as medical schools and teaching hospitals have tried to train fewer specialists and more generalists.

Sources: *Physician Characteristics and Distribution in the US* (1992 edition and 2004 edition), American Medical Association; US Bureau of Census, www.census.gov/popest/states/tables/nst_est2004_01.xls
Note: Primary care physicians include pediatricians, internists, family practitioners and general practitioners.

Physician Gender Composition in the US and Massachusetts (1990 and 2002)

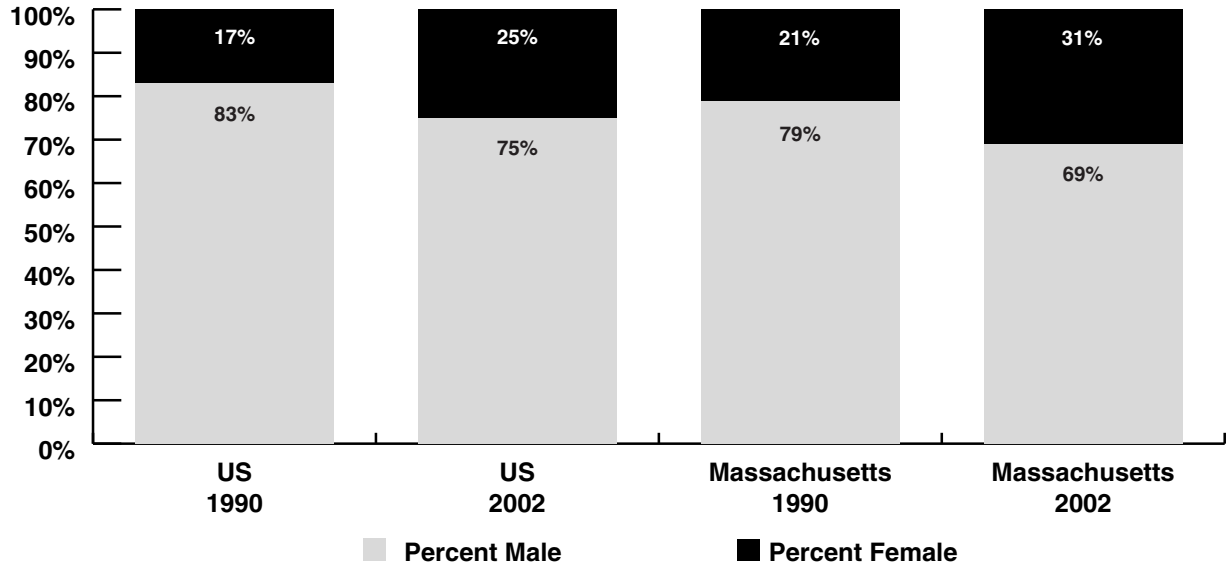


Figure 3.6

- The number of female physicians increased substantially in both the US and Massachusetts over the past twelve years.
- In both 1990 and 2002, Massachusetts had a greater proportion of female physicians than the US overall.

Source: *Physician Characteristics and Distribution in the US* (1992 and 2001-02 editions), American Medical Association

Distribution of 1st-Year Medical Students by Gender and Race/ Ethnicity in the US and Massachusetts (1989-1990 to 2003)

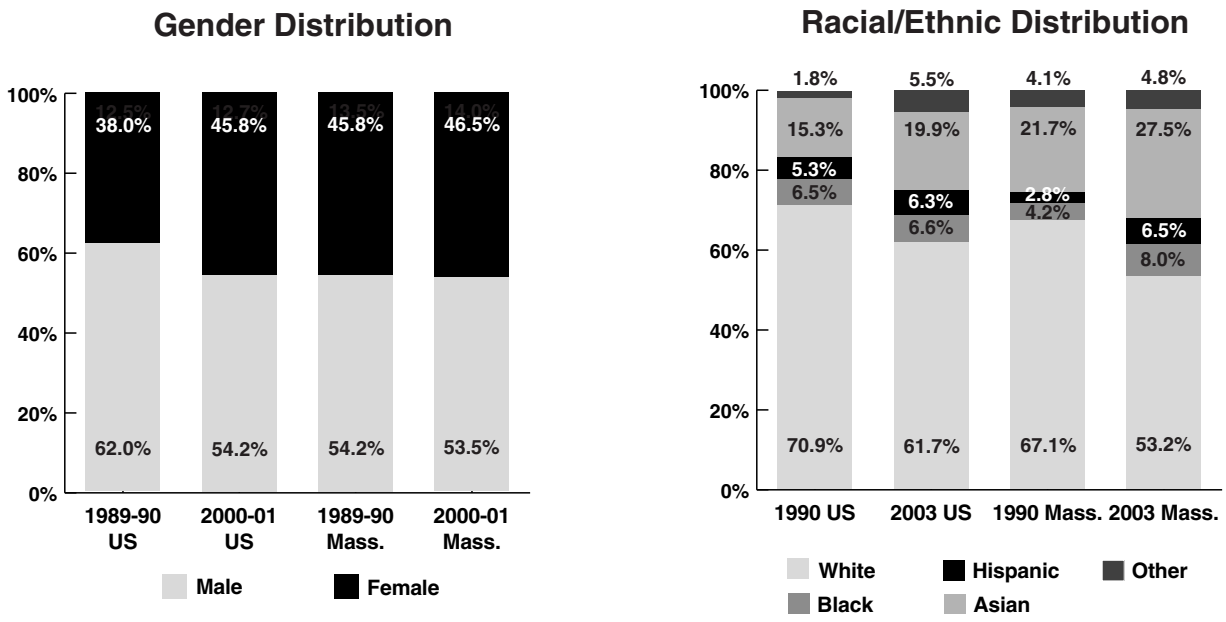


Figure 3.7

- Nationally, there was an 8% increase in the proportion of women entering medical school, while in Massachusetts the proportion of females entering our four medical schools increased less than 1%.

- As of 2003, in both the US and Massachusetts, minority first-year medical students were growing as a percent of total first-year medical students.

Sources: *Medical School Admission Requirement*, US and Canada, 1991-92 and 2004-05 (editions 41 and 55), Association of American Medical College, Washington, D.C.

Distribution of Health Care Expenditures in Massachusetts (1990 and 2000)

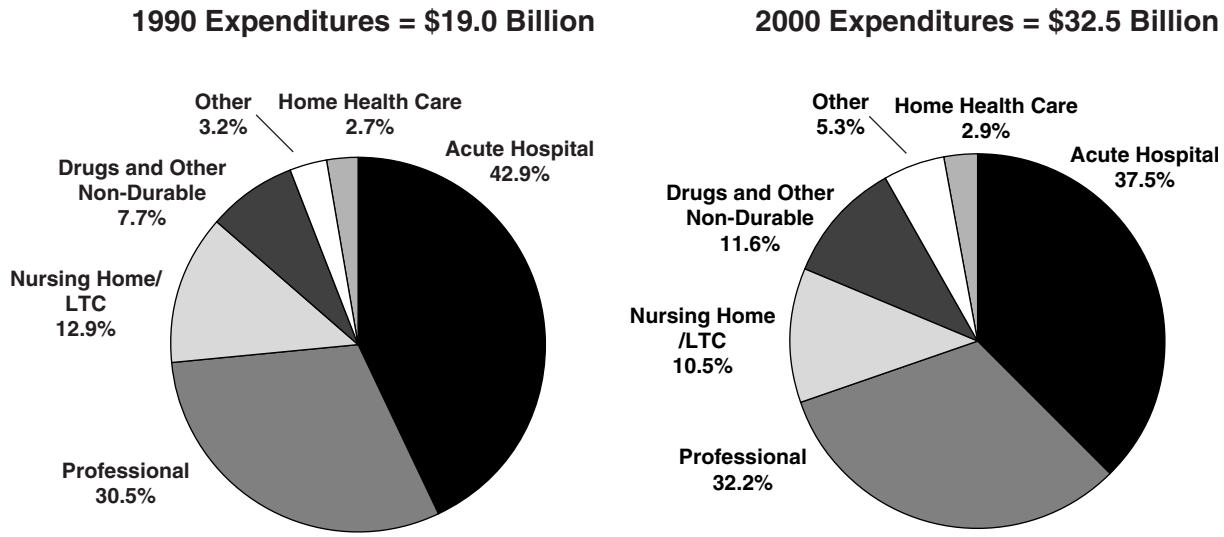


Figure 3.8

- In Massachusetts, health care expenditures increased from $19 billion to $32.5 billion over the decade. The proportion of these dollars spent on institutions—nursing homes and hospitals—declined over the decade, while expenditures in all other categories increased.

Source: "Massachusetts Personal Health Care Expenditures (PHCE), 1980-2000," Centers for Medicare and Medicaid Services, Office of the Actuary, National Health Statistics Group
Note: These numbers have not been adjusted for inflation. CMS only updates state-level information every five years.

Distribution of Medicare Expenditures in Massachusetts (1990 and 2001)

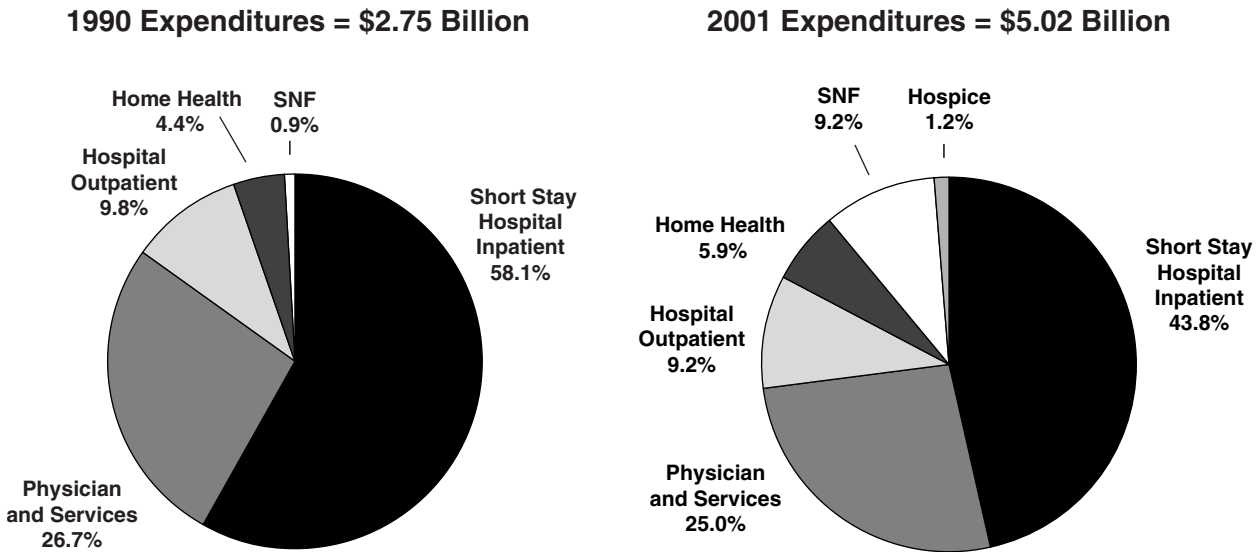


Figure 3.9

- From 1990 to 2001, total Medicare payments for Massachusetts Medicare recipients increased by 82%. During this time, the proportion of Medicare payments for inpatient hospital care greatly decreased, while skilled nursing facility (SNF) and home health payments increased.[2]

Source: *Health Care Financing Review*, Medicare and Medicaid Supplement (1992 and 2003), Health Care Financing Administration
Note: The Medicare expenditure numbers in these charts do not represent complete Medicare expenditures; for example, they exclude amounts paid for managed care services and are limited to only those types of services indicated in the charts. CMS only updates state-level information every five years.

Distribution of Medicaid Expenditures in Massachusetts (1990 and 2001)

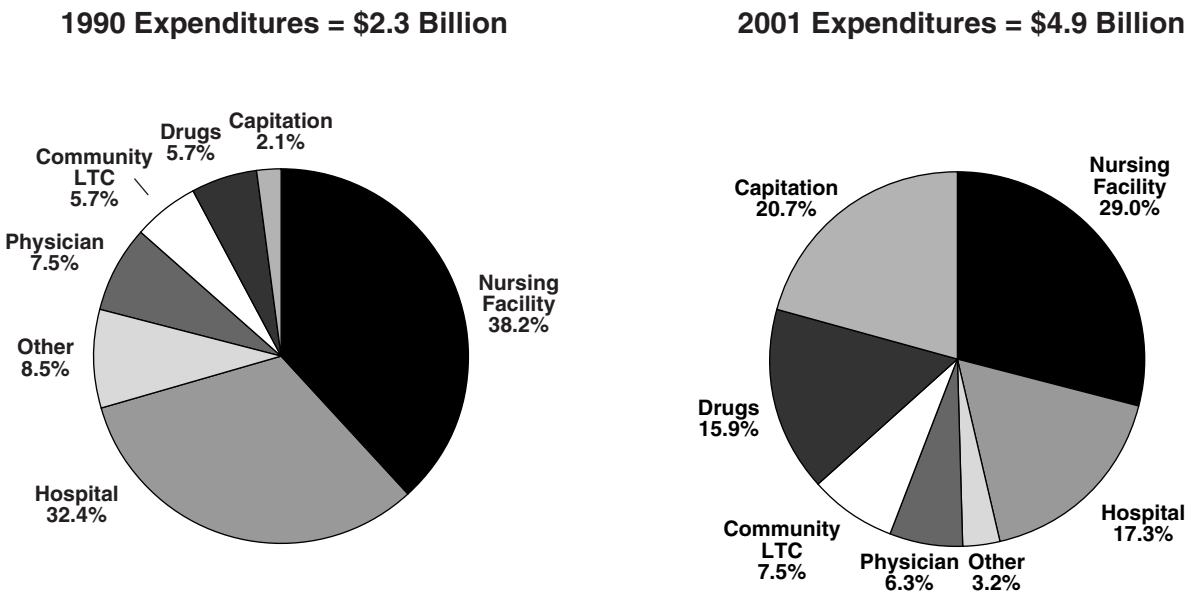


Figure 3.10

- From 1990 to 2001, total Massachusetts Medicaid expenditures rose 109%. The percent for capitation payments increased ten-fold, reflecting Massachusetts Medicaid's increased reliance on managed care.
- During this period Medicaid spent relatively less on nursing facility payments and more on community long term care. Since the increased capitation payment includes expenditures for both hospital and physician care, these two categories in 2001 are not directly comparable to their 1990 level.
- Drug costs almost tripled as a proportion of the Medicaid dollar.

Source: Massachusetts Division of Medical Assistance, Budget Office
Note: These numbers have not been adjusted for inflation.

Distribution of Patient Disposition at Discharge from an Acute Hospital in Massachusetts (1990 and 2004)

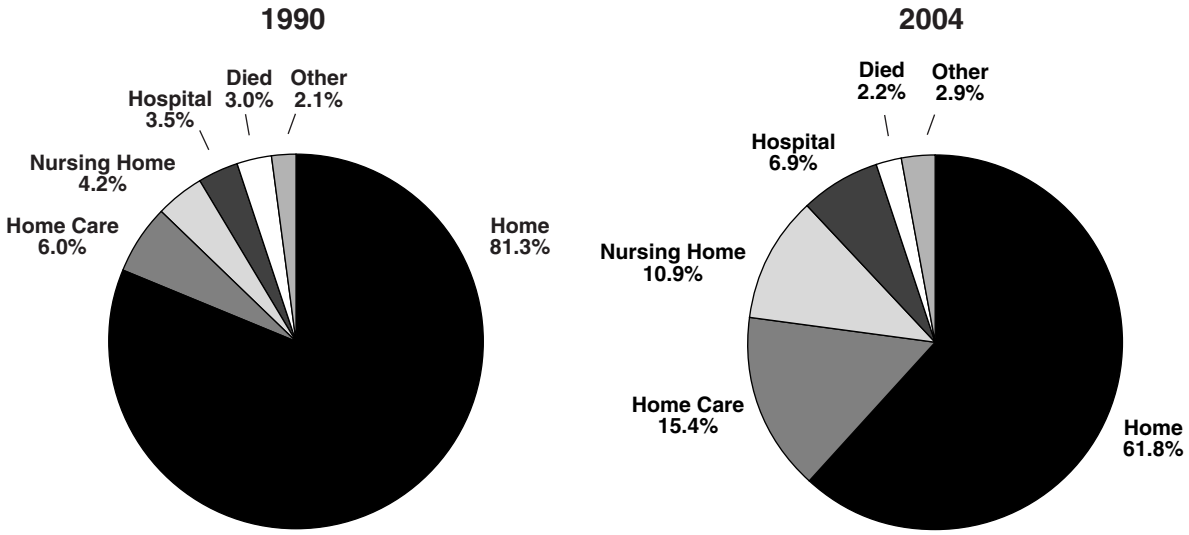


Figure 3.11

- Compared to 1990, in 2004, Massachusetts residents were less likely to be discharged home with no support services after an acute hospital stay. The proportion of inpatients who were sent to nursing homes, sent home with health care services, or sent to another acute or specialty hospital all increased.

- This trend probably reflects the shortening of the acute hospital stay (see Figure 3.14 on page 47) and the sicker patient hospitalized by the end of the decade (see Figure 3.15 on page 48).

Source: Hospital discharge data, Massachusetts Division of Health Care Finance and Policy

Site of Death of Massachusetts Residents (1991 and 2000)

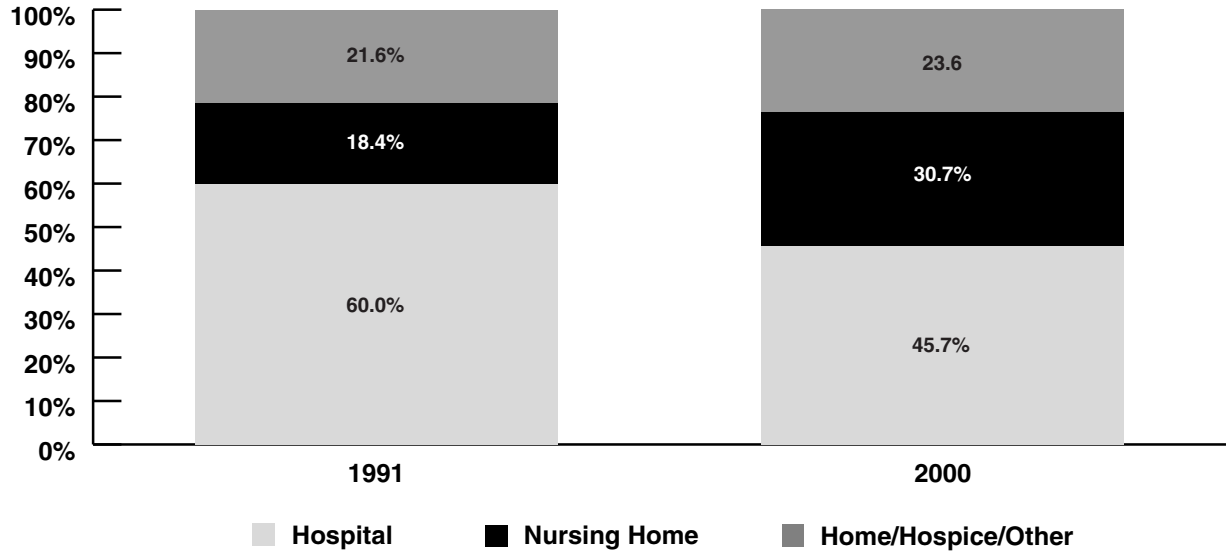


Figure 3.12

- From 1991 to 2000, the likelihood that a nursing home would be the place of death for a Massachusetts resident increased 67%. In contrast, the proportion of Massachusetts residents for whom the hospital was the place of death fell 24%.

Source: Massachusetts Department of Public Health, Office of Health Statistics, Research and Evaluation

Acute Hospital Inpatient Days and Outpatient Visits per 1,000 Population in Massachusetts (2000-2004)

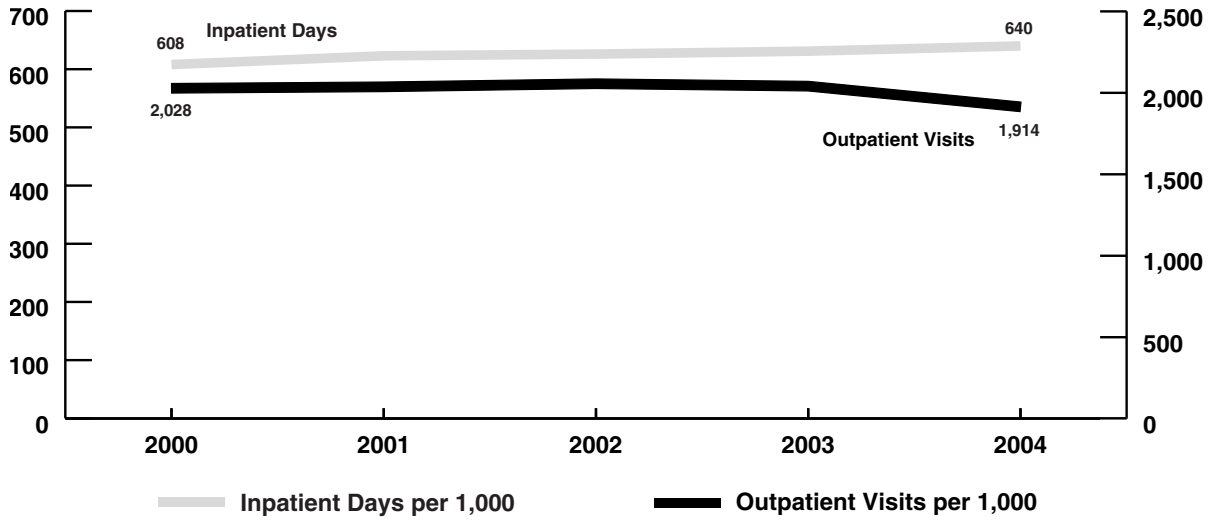


Figure 3.13

- Increased pressure for cost containment in the health care system and improved medical technology and pharmacology facilitated many patients to be managed on an outpatient basis, resulting in fluctuations in inpatient and outpatient utilization.

Sources: "Hospital Statement for Reimbursement, DHCFP-403" and hospital discharge data, Massachusetts Division of Health Care Finance and Policy
Note: Emergency Room visits not included.

Acute Hospital Discharges per 1,000 Population and Average Length of Stay in Massachusetts (1990-2004)

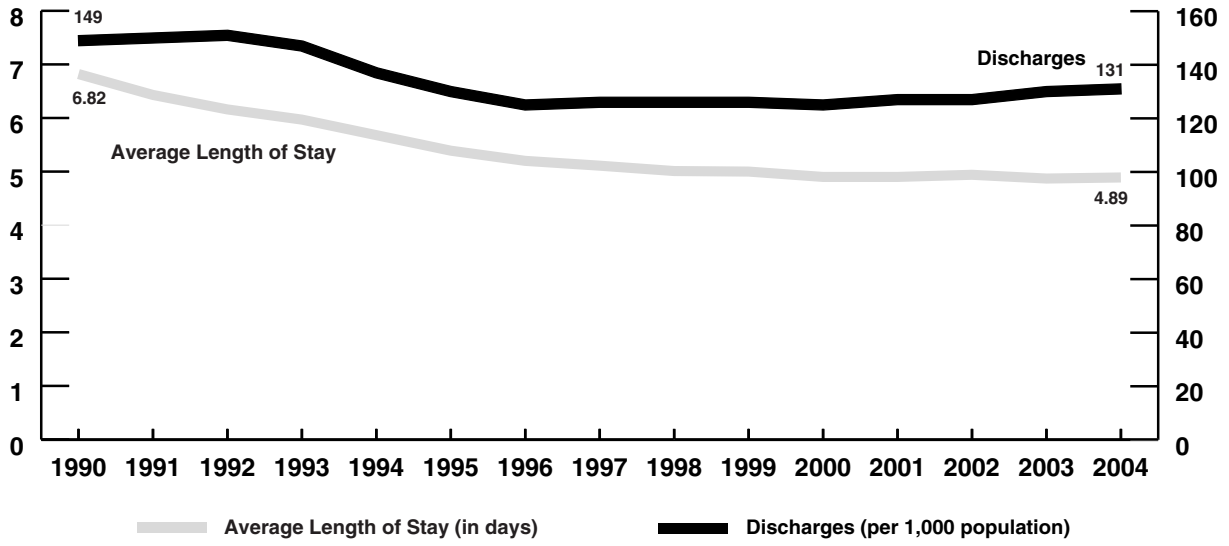


Figure 3.14

- Between 1990 and 2004, the total number of acute hospital discharges per 1,000 population dropped 16% in Massachusetts. The average length of stay (ALOS) fell 28% during this time period. These trends underscore the changing role hospitals play in health care delivery, which is characterized by fewer admissions and shorter stays when individuals are admitted.

Source: Hospital discharge data, Massachusetts Division of Health Care Finance and Policy

Acute Hospital Case Mix Index (CMI) in Massachusetts (1990-2003)

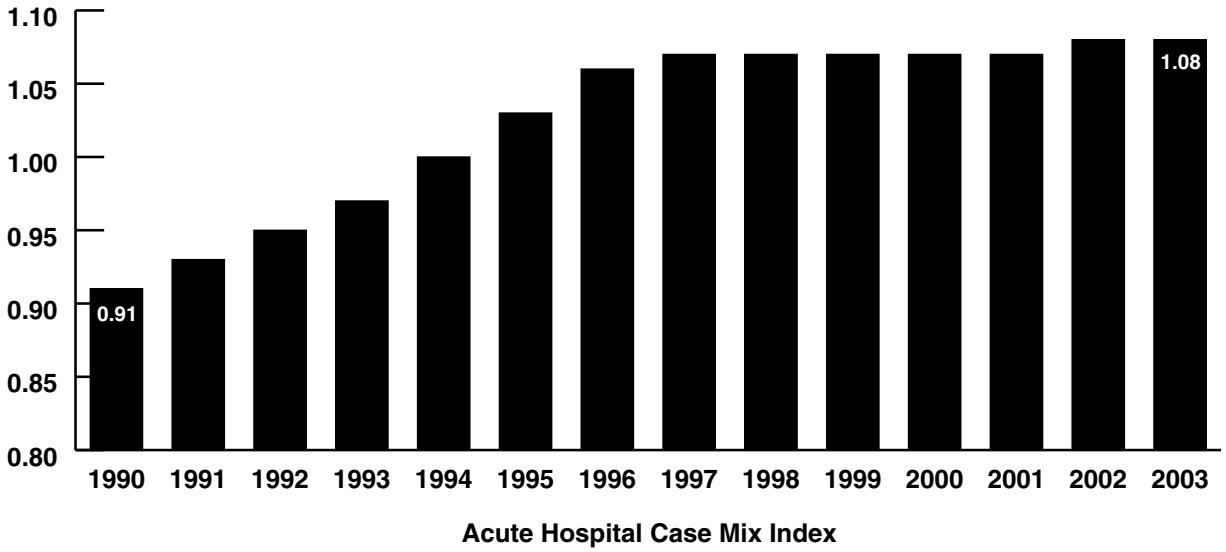


Figure 3.15

- The case mix index (CMI) is a measure of relative resource use in hospital care. The CMI is calculated by assigning a cost weight to all hospital cases. A case costing the average amount of money yields a cost weight of 1.0. As cases increase in cost and complexity, the cost weight assigned to them also increases. To derive the CMI for a given year, one sums up all the cost weighted cases and then divides them by the total number of cases for that year. This indicator may be used as a proxy for the complexity of services used to treat a particular group of patients.

- From 1990 to 2003, the Massachusetts acute hospital CMI increased 18%. Thus, while patients were being admitted to the hospital less frequently and staying shorter periods of time (see Figure 3.14 on page 47), once admitted, the cost and complexity of hospital patients increased. Some of this increase is explained by the likelihood that less complex cases are being treated in an ambulatory setting, leaving more complex cases to be hospitalized. However, since 1997 there has been little change in the CMI.

Source: Hospital discharge data, Massachusetts Division of Health Care Finance and Policy

Inpatient Days and Discharges for Teaching versus Community Hospitals in Massachusetts (1990 and 2004)

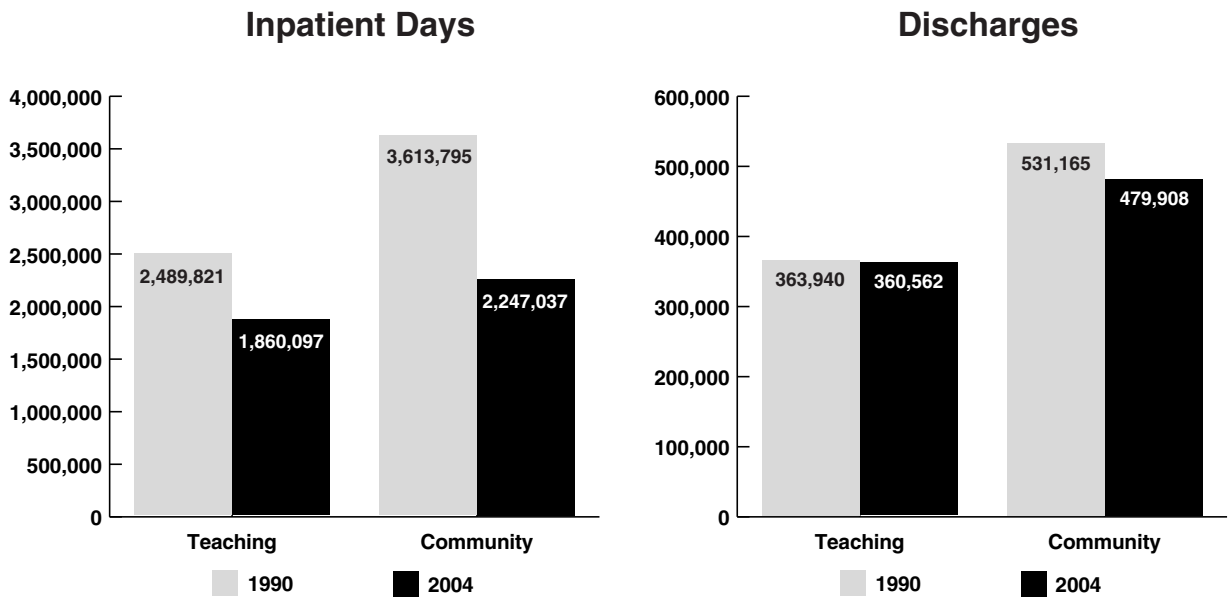


Figure 3.16

- From 1990 to 2004, the number of inpatient days declined at a faster rate for community hospitals (38%) than for teaching hospitals (25%). Additionally, inpatient discharges declined 10% for community hospitals compared to a 1% decline for teaching hospitals.

- Managed care has been largely unsuccessful in moving primary and secondary care out of teaching hospitals to less expensive community hospitals. This has had an impact on the overall cost of hospital care in Massachusetts.

Source: Hospital discharge data, Massachusetts Division of Health Care Finance and Policy

Acute Hospital Discharges by Payer in Massachusetts (1990 and 2004)

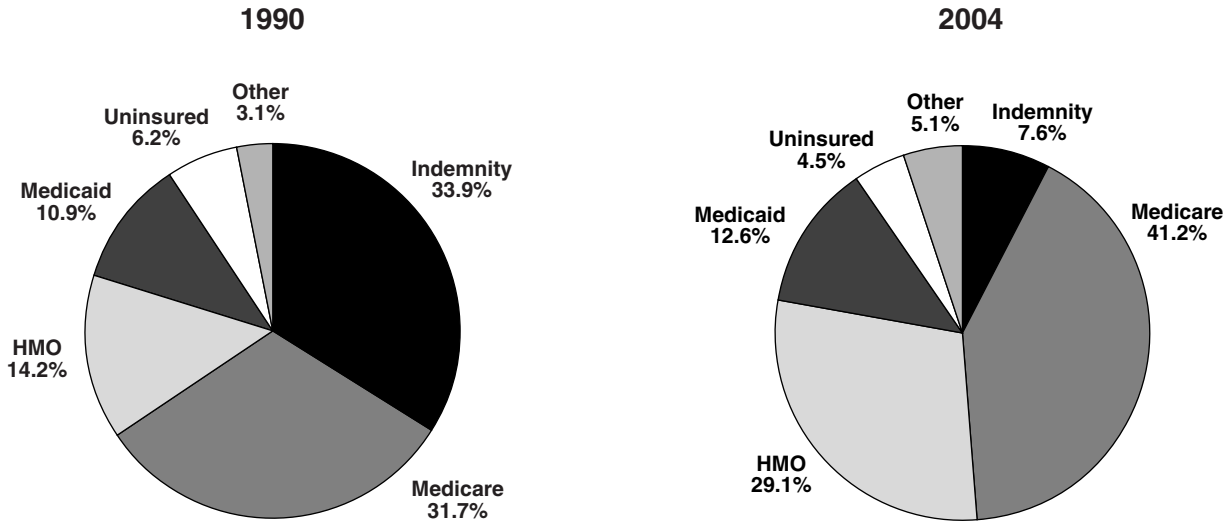


Figure 3.17

- Many payer categories had significant changes in their share of total acute hospital discharges. The proportion of HMO discharges more than doubled, discharges covered by indemnity payers dropped dramatically from 34% to 7.6%, and the proportion of discharges for individuals without insurance fell from 6.2% to 4.5% of all discharges.

Source: Hospital discharge data, Massachusetts Division of Health Care Finance and Policy

Nursing Home Days by Payer in Massachusetts (1990 and 2004)

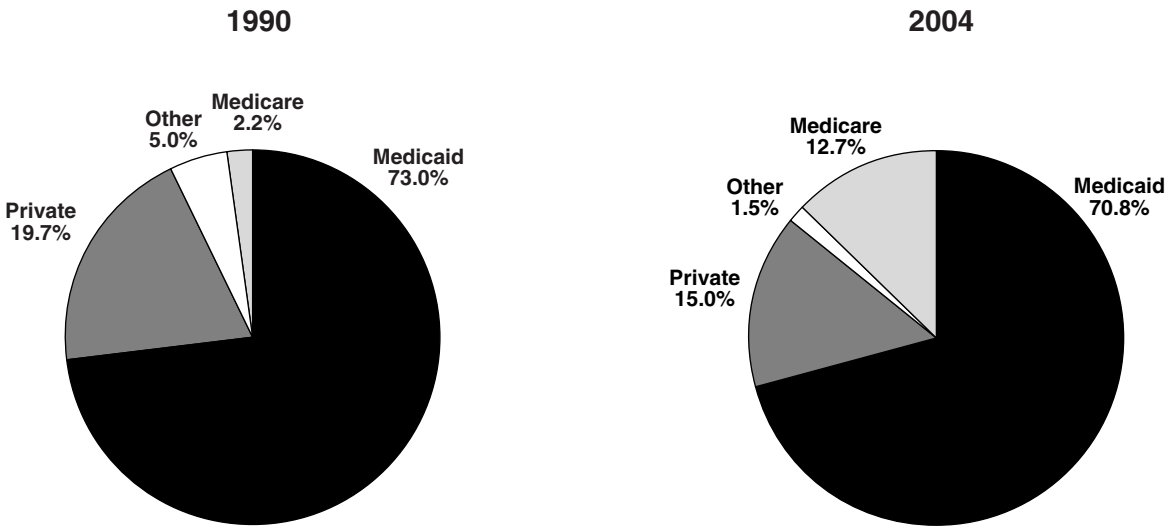


Figure 3.18

- Medicaid was responsible for proportionately fewer nursing home days in 2004 than it was in 1990, while Medicare represented significantly more. Medicare covers only short-term recuperative nursing home stays.

- See Figure 3.20 on page 53 for balance between share of days and share of revenue.

Source: HCF-1 nursing facility cost reports, Massachusetts Division of Health Care Finance and Policy

Distribution of Acute Hospital Revenues by Payment Source in Massachusetts (1991 and 2004)

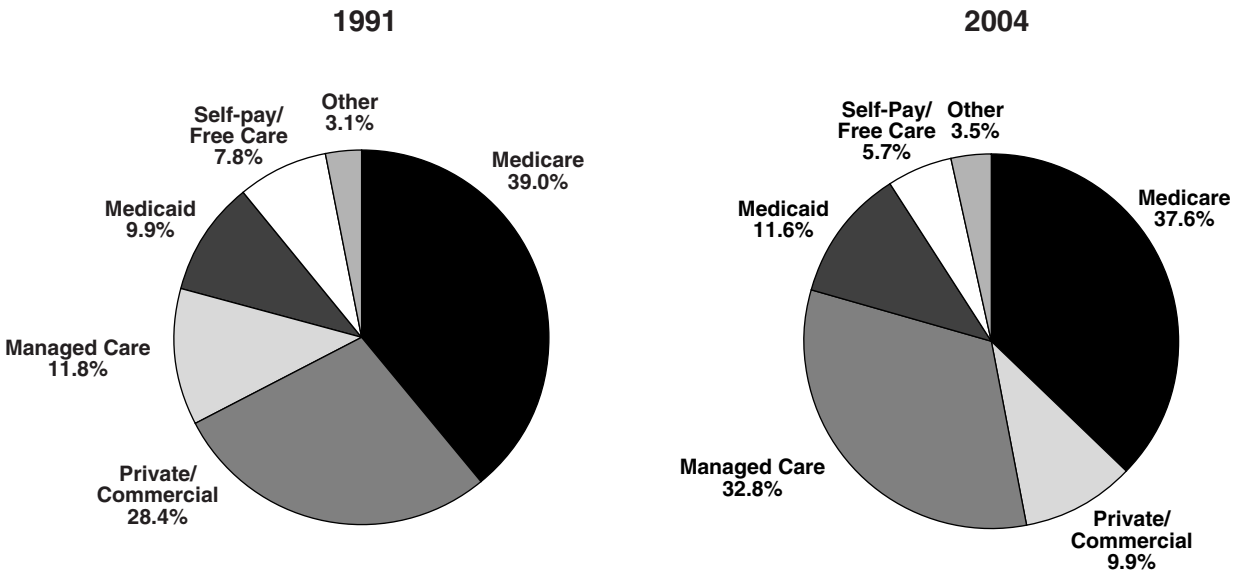


Figure 3.19

- Hospital revenues from managed care increased tremendously while private/commercial insurers decreased in 2004 compared to 1991.

Source: "Hospital Statement for Reimbursement, DHCFP 403," Massachusetts Division of Health Care Finance and Policy

Distribution of Nursing Home Revenues by Payment Source in Massachusetts (1990 and 2003)

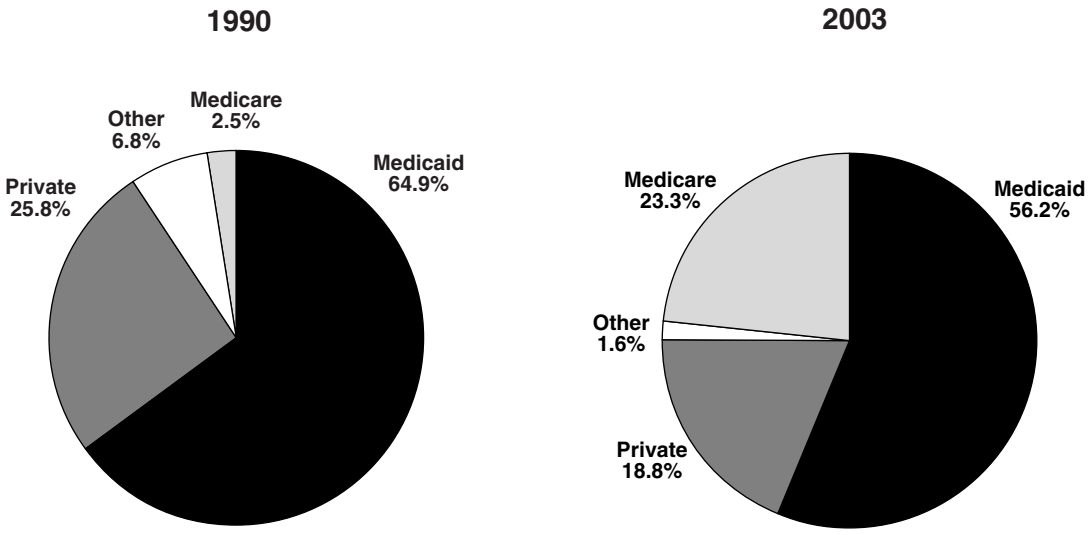


Figure 3.20

- In 2003, nursing home revenue was comprised of a larger share of Medicare revenues and a smaller share of Medicaid revenues than in 1990. Medicare covers only short-term recuperative nursing home stays. Revenues from other sources remained relatively stable.

- Medicaid patients comprise, by far, the largest portion of nursing home patients, but represent far less of nursing home revenues. For private and Medicare patients, the reverse is true—nursing homes derive more of their revenues than their proportion of patient days from these two payers (see Figure 3.18 on page 51).

Source: HCF-1 nursing facility cost reports, Massachusetts Division of Health Care Finance and Policy

Distribution of Community Health Center Revenues by Payment Source in Massachusetts (1992 and 2003)

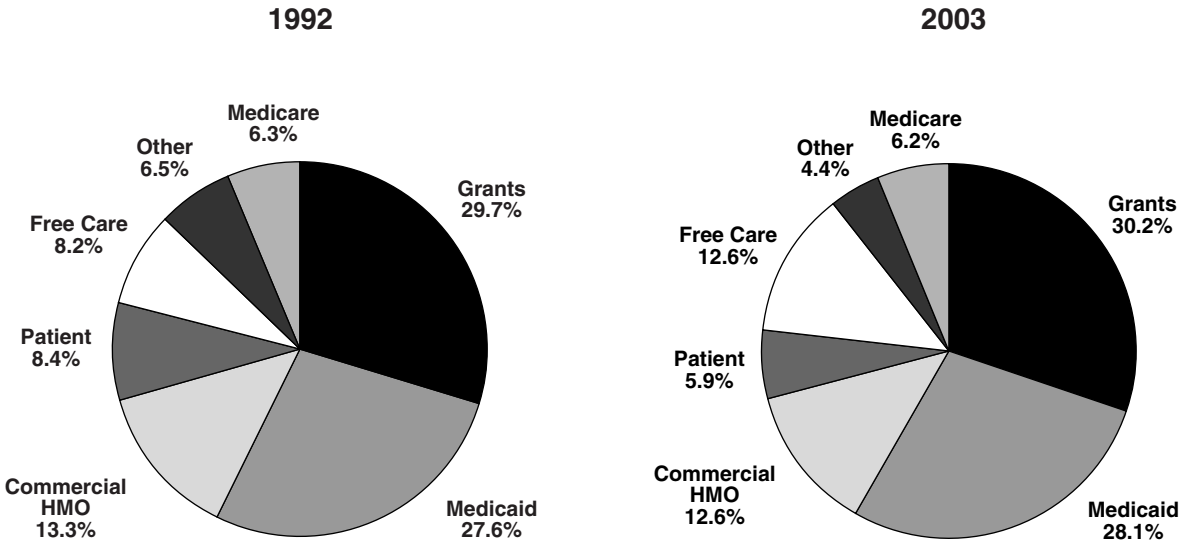


Figure 3.21

- In 2003, the proportion of community health center revenues from Free Care (or the Uncompensated Care Pool) increased to 12.6% compared to 8.2% in 1992. Both patient self-pay and other sources of revenue proportionately declined during the same time period.

Sources: *Safe Harbors for Patient Care in Health Care Reform*, March 1994 and *MA CHCs in Crisis: Facts, Trends and Strategic Solutions for Investing in the Safety Net, 2000, 2002*, Massachusetts League of Community Health Centers

Median Total and Operating Margins of Acute Hospitals in Massachusetts (2000-2004)

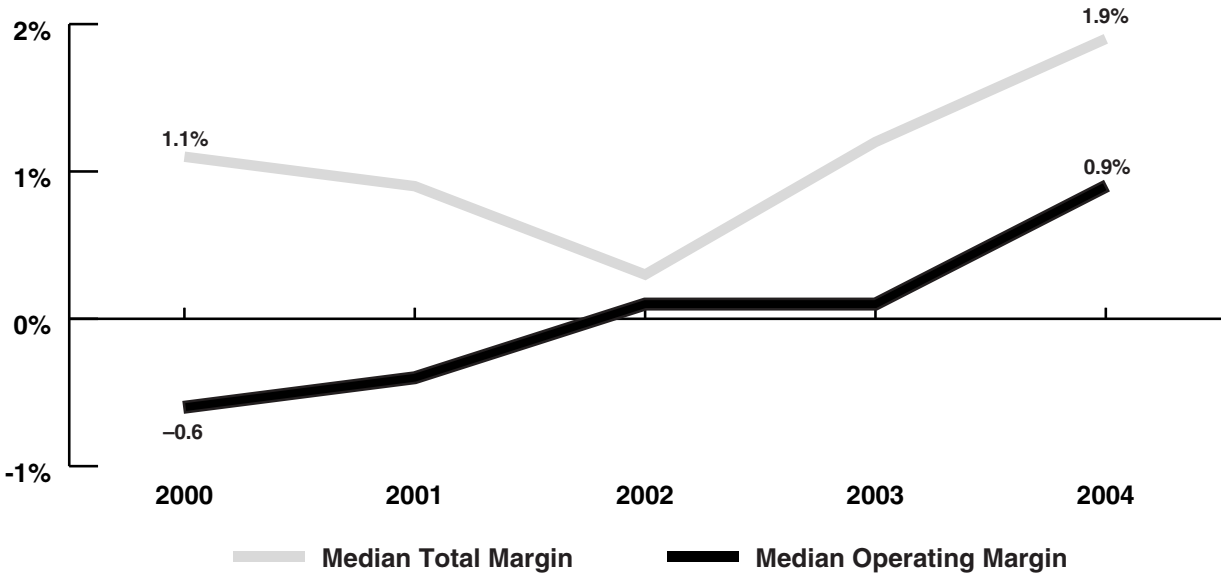


Figure 3.22

- Hospital profitability improved beginning in 2002 with fewer hospitals experiencing loses. Improved total margins were due to gains in both operating and non-operating performance.
- Operating margins have improved, however in 2004, 42% of acute hospitals operated at a loss.

Source: Massachusetts Division of Health Care Finance and Policy, *FY04 Annual Acute Hospital Financial Report*

Median Percent of Profit and Operating Margins of Nursing Facilities in Massachusetts (1995-2004)

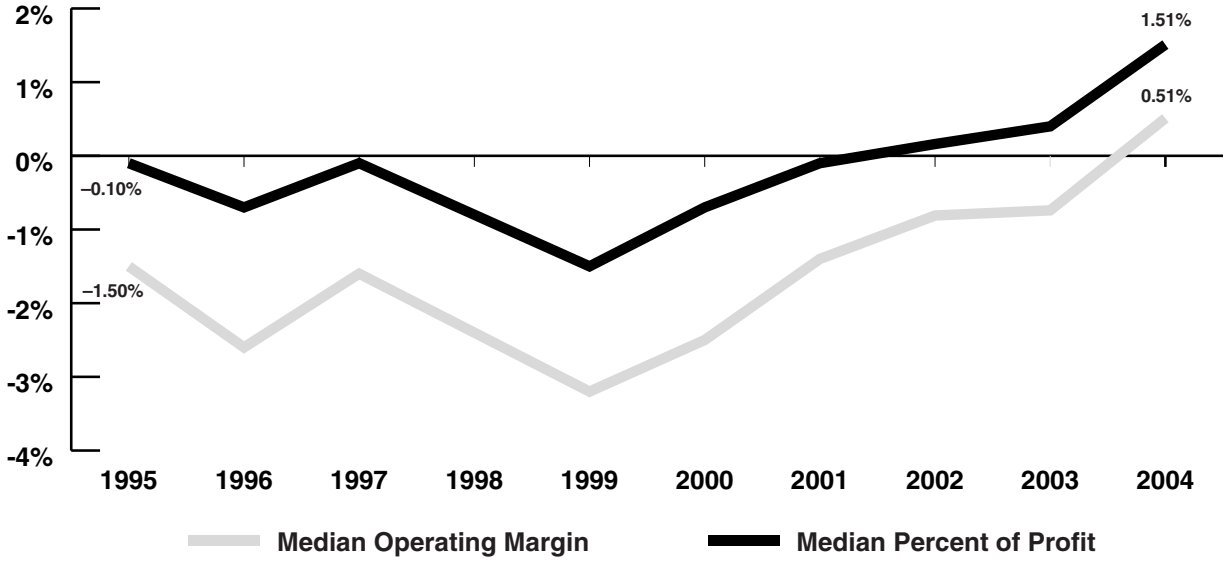


Figure 3.23

- Since 1999, nursing home margins and profits have been steadily improving. In 2004, for the first time in a decade, half of Massachusetts nursing homes had positive operating margins. In the past three years, half of the nursing homes showed a profit.

- Due to complicated ownership relationships, financial data should be viewed with caution. These figures do not represent all income and expenses received or incurred by the nursing facility industry in Massachusetts. They do not include income and expenses of affiliated management and realty companies, to whom Nursing Facilities pay management fees and lease payments, respectively. As a result, the above figures may underestimate the industry's total profits.

Source: HCF-1 nursing facility cost reports, Massachusetts Division of Health Care Finance and Policy
Note: Median Operating Margin is the median of (total income-total misc. income -total expenses)/total income of each individual facility. Median Profit Percent is the median of (total income-total expenses)/total income of each individual facility.

Median Operating Margins of Community Health Centers in the US and Massachusetts (2001-2004)

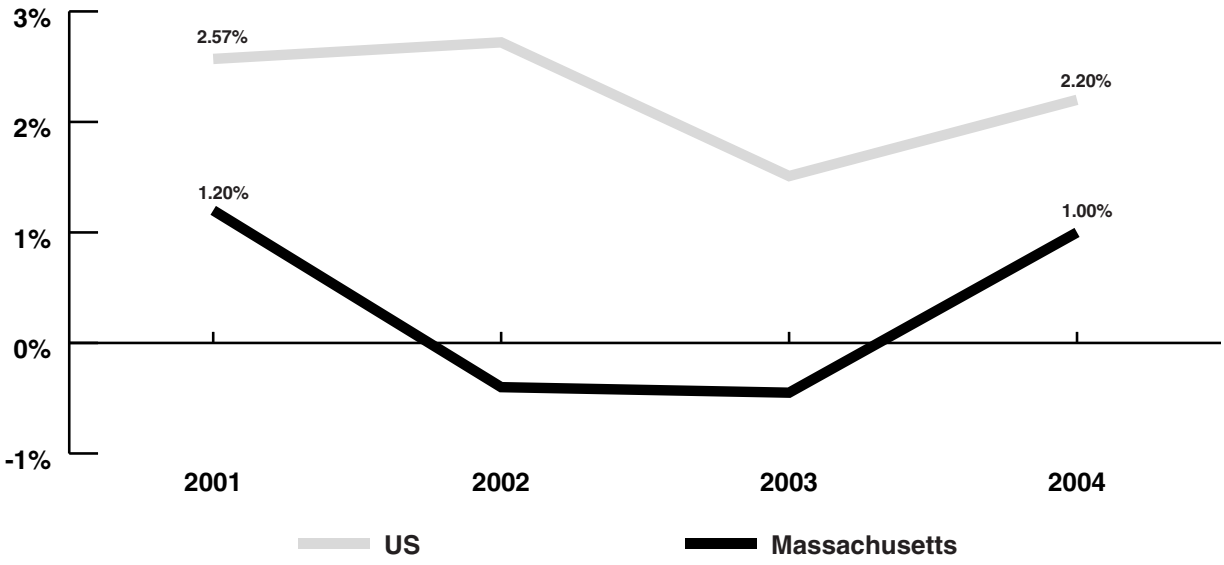


Figure 3.24

- For only the second time in the past ten years, going back to 1995, at least half of Massachusetts community health centers experienced a positive operating margin in 2004.
- The median operating margin of Massachusetts community health centers remains consistently below the nationwide median operating margin.

Source: *Massachusetts Health Center, Financial Trends Analysis,* October 2005, Massachusetts League of Community Health Centers
Note: Operating Margin = (Total Operating Revenue - Total Operating Expense)/Total Operating Revenue.

Drug and Other Nondurable Medical Expenditures per Capita and Percent of Health Care Expenditures in Massachusetts (1994-2004)

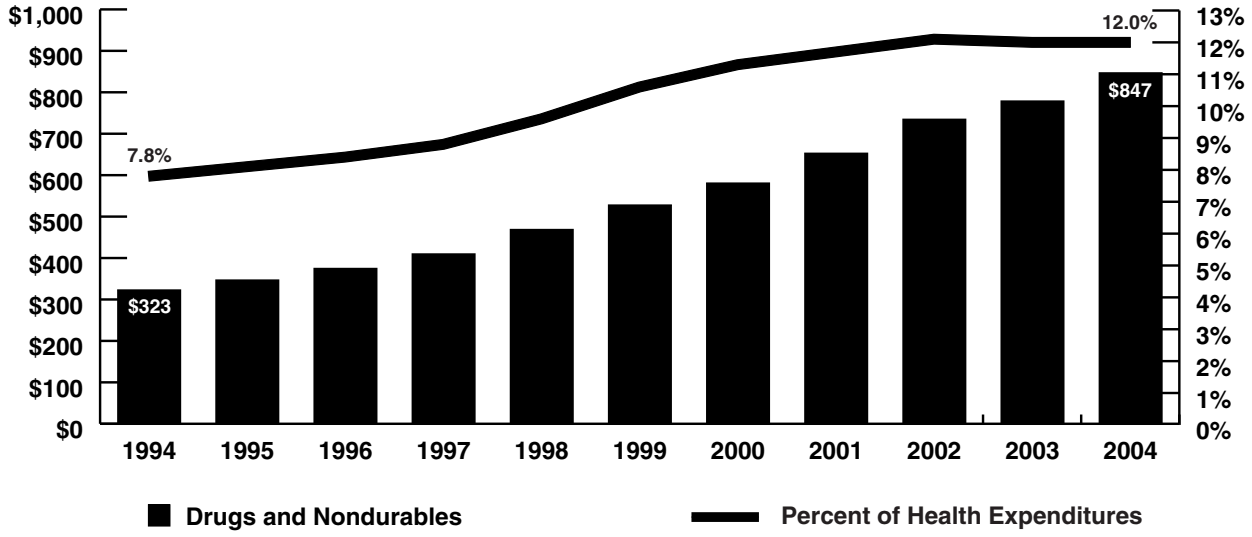


Figure 3.25

- The proportion of per capita prescription drug and nondurable medical expenditures to total personal health care expenditures remained stable at around 12% from 2000 through 2004.
- The issue of increasing pharmaceutical costs has received attention at the state and national levels. State policies developed to address these concerns over the decade include the creation of the Pharmacy Program (for seniors) and the continued coverage of pharmaceuticals under the Massachusetts Medicaid program. These increases have also led to the introduction of a three-tiered payment policy among many HMOs that cover drugs, as well as the introduction of the new Medicare Part D program to provide drug coverage to seniors.

Source: "Massachusetts Personal Health Care Expenditures (PHCE), 1980-2004," All Payers, Centers for Medicare and Medicaid Services, Office of the Actuary, National Health Statistics Group, and the US Bureau of the Census
Notes: These numbers have not been adjusted for inflation.

Average Drug Charge per Acute Hospital Discharge and Percent of Total Hospital Charges in Massachusetts (1990-2004)

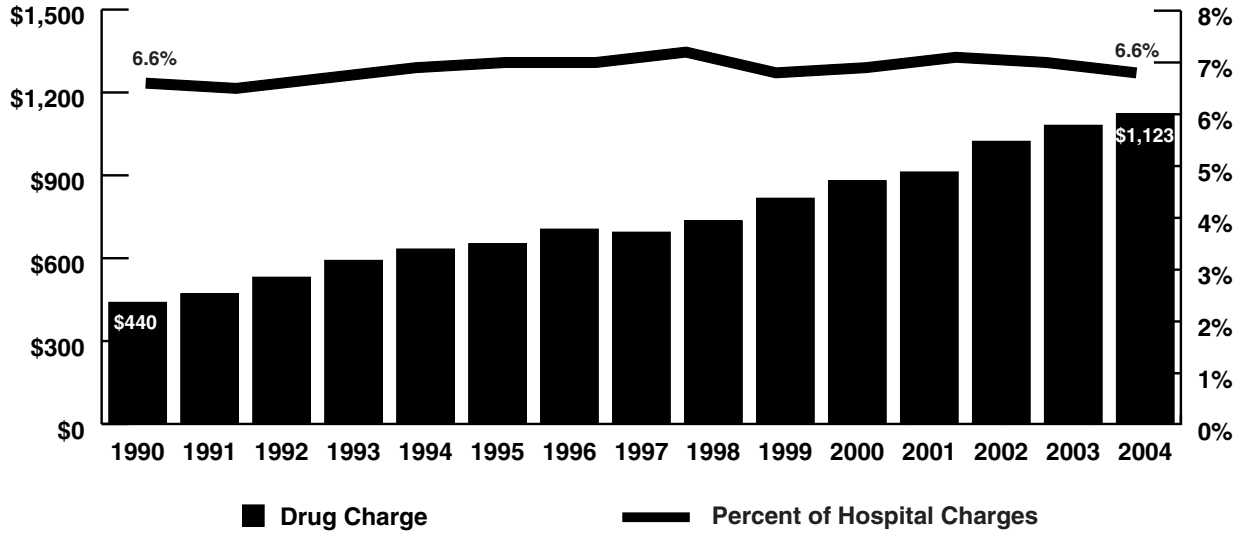


Figure 3.26

- The average prescription drug charge per acute hospital discharge doubled between 1990 and 2001. However, the pharmacy share of total charges during this time stayed relatively steady, reflecting the large increase in total hospital charges throughout this period.

- While the increased use of pharmaceuticals may allow shorter and fewer hospitalizations, the rapid increase in drug costs are a tremendous challenge to the entire health care system.

Source: Hospital discharge data, Massachusetts Division of Health Care Finance and Policy
Notes: These numbers have not been adjusted for inflation. These data include only drugs used during a hospital stay.

Endnotes for Chapter 3: Health Care Delivery System

1. Hospital-based long-term care facilities were included in our count of nursing homes and permanent bed levels.

2. Physician and supplier services: the supplier services include services and supplies provided by suppliers, such as medical supply and ambulance companies, independent laboratories and portable X-ray suppliers billing independently, voluntary health and charitable organizations, and pharmacies.

Chapter 4: Health Care Consumption

This "Chapter 4" is original to Massachusetts Health Care Trends: 1990-1999.

While much attention in this publication is paid to the institutions of health care, this chapter is about all of us. Amidst all of the changes illustrated in the previous chapters, how have we fared? Massachusetts has made improvements in people's lives in many significant ways: people are living longer with AIDS, the teen birth rate is down and the stubborn discrepancy between African-American and white infant mortality is starting to narrow.

Other things are inexorable such as aging and its accompanying increase in chronic disease. Antibiotics that helped ensure that we no longer die quickly from infectious disease don't insulate us from the accumulated disabilities of chronic disease. And while women, especially in Massachusetts, are challenging the traditional age boundaries of motherhood, even that often comes with the compromised health of multiple fetuses.

Health care is a big business in Massachusetts as it is elsewhere, even though it is generally nonprofit here. In many ways, we have started to apply our consumer skills to obtaining health care, but not to paying for it. We want information—medical, outcomes and satisfaction (but not cost) even if the data show that we haven't changed our behavior much yet because of such information. This is an area we expect to change greatly in the next decade.

Public Health

Aging and Chronic Disease

(continued on page 62)

Health by Gender

AIDS

Public Health Expenditures, in Millions, on Four Major Programs in Massachusetts (1991 and 2001)

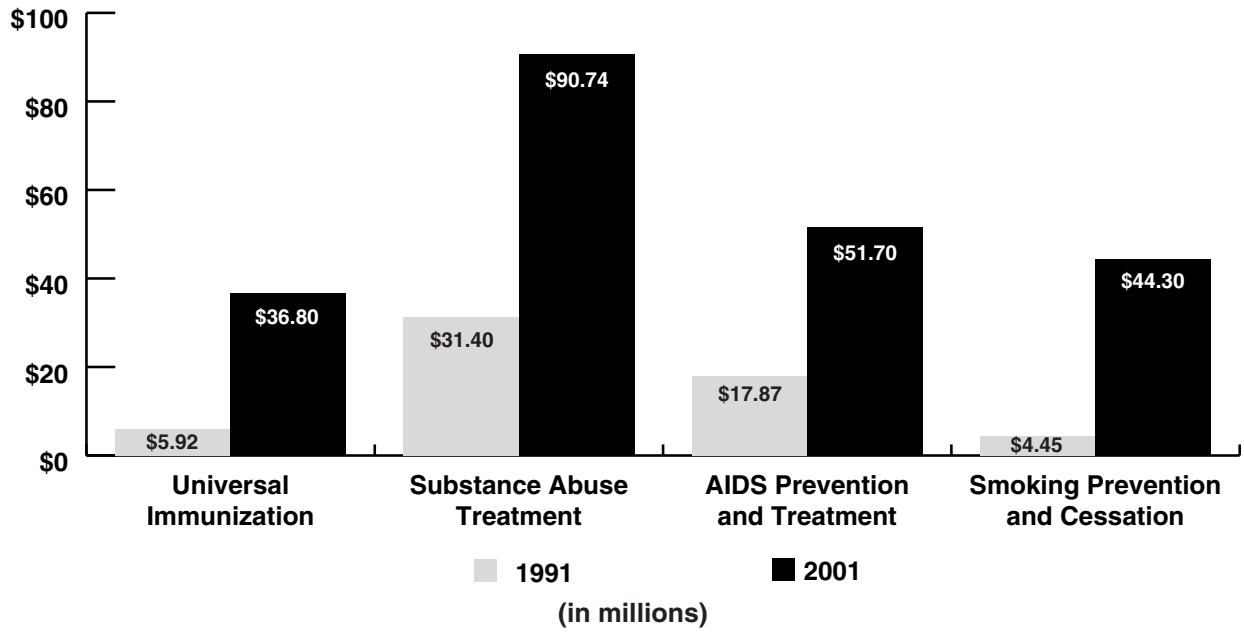


Figure 4.1

- Between 1991 and 2001, the Commonwealth increased spending for each of four major health programs: immunization, substance abuse, AIDS and smoking. However, 1991 expenditures for smoking prevention and cessation were substantially lower than the 1998 level of $53.41 million.

Source: Massachusetts Department of Public Health
Note: These numbers have not been adjusted for inflation.

Childhood Immunization Rates in Massachusetts (1993-2001)

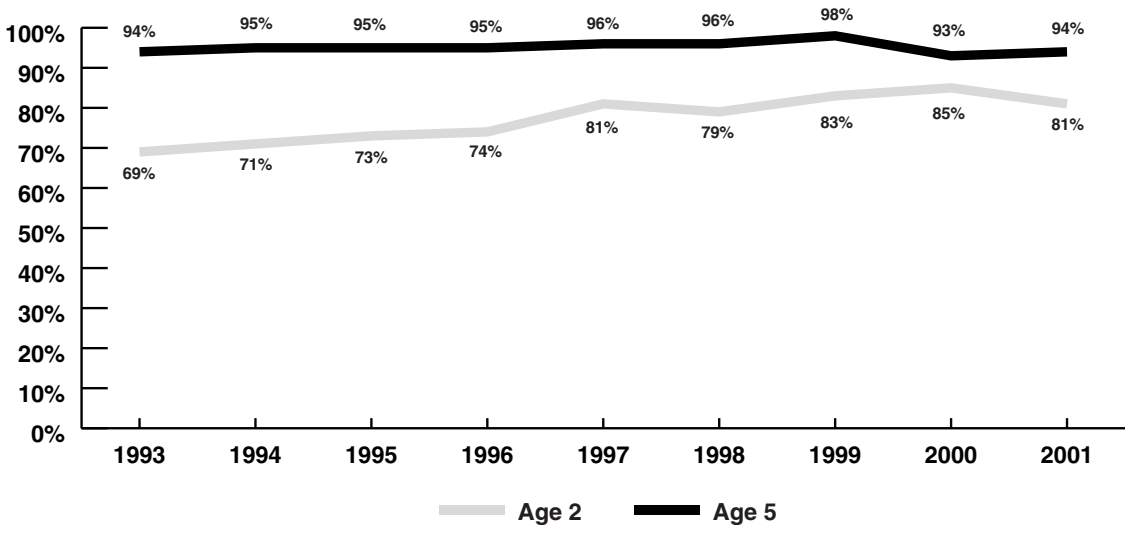


Figure 4.2

- Between 1993 and 2001, childhood immunization rates improved, particularly for two-year-old children.

Source: MassCHIP database, Massachusetts Department of Public Health, Communicable Disease Programs—Immunization Program
Note: Complete data were unavailable for 1990-1992.

Teen Birth Rate in the US and Massachusetts (1990-2003)

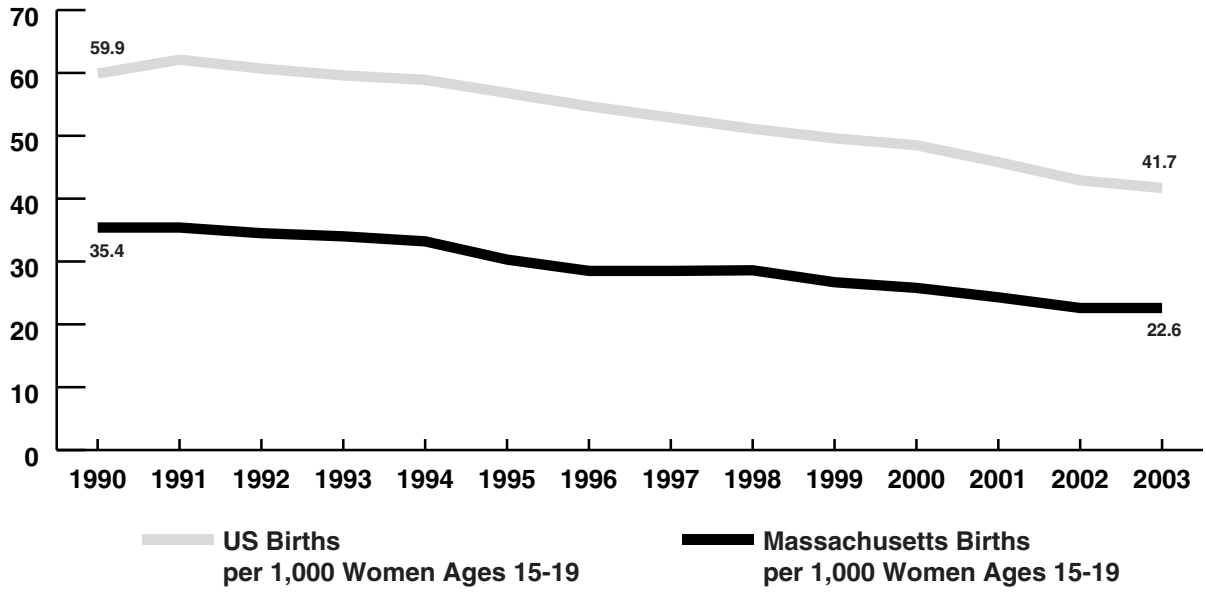


Figure 4.3

- For every 1,000 female residents in Massachusetts ages 15-19, there were nearly 23 live births in 2003, a significant decrease from the 1990 rate of 35.4 live births. These rates were substantially lower than national rates—the US birth rate dropped from 59.9 births per 1,000 to 41.7 births.

Source: Massachusetts Department of Public Health, Mass. Births 2003, www.mass.gov/dph/bhsre/birth/03/births_03_part1.pdf

Infant Mortality Rate and Low Birth Weight Rate in the US and Massachusetts (1989-2003)

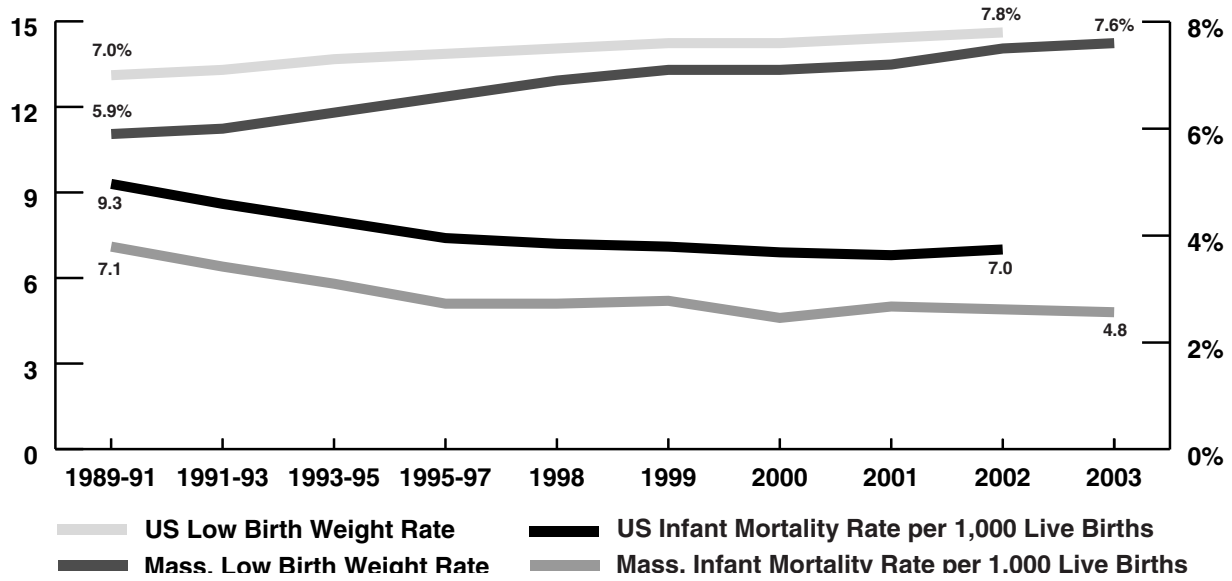


Figure 4.4

- Throughout the 1990s, the Massachusetts infant mortality rate (IMR) was below that of the United States. The decade also saw a substantial lowering of the Massachusetts IMR.

- In 2003, 7.6% of infants born to Massachusetts women were low birth weight (less than 2,500 grams or 5.5 pounds). The low birth weight rate increased over the decade for both Massachusetts and the nation. Recent medical advances are at least partially responsible for the increased survival of low birth weight babies. Additionally, the proliferation of multiple births to older mothers in Massachusetts has added to the increase in low birth weight babies (see Figure 4.10 on page 72).

- The proportion of low birth weight babies varies by race and ethnicity of mother, as does the infant mortality rate.

Sources: *Health, United States, 2001 and 2004,* US Department of Health and Human Services; *Advance Births 2000 and Massachusetts Births 2003*, Massachusetts Department of Public Health

Prevalence of Health Risk Factors in the Massachusetts Populations (1990 and 2000)

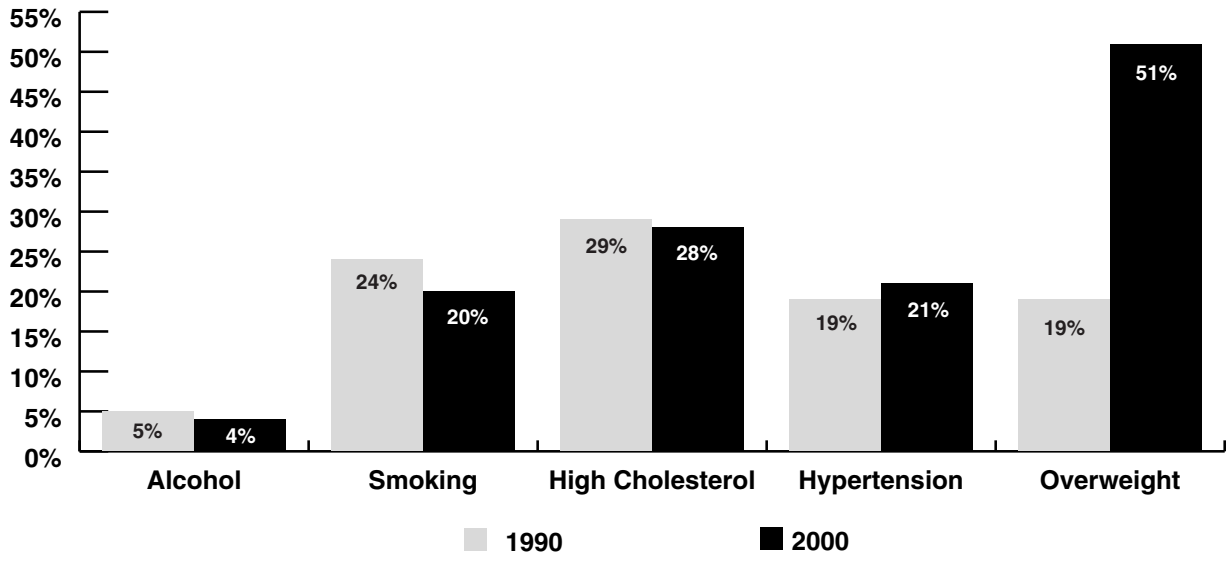


Figure 4.5

- The proportion of Massachusetts residents for whom smoking, alcohol, or high cholesterol is a risk factor decreased between 1990 and 2000, while the proportion of those with hypertension and obesity as a risk factor rose during this time period.

- Massachusetts residents were far more likely to be overweight by the end of the decade than at the beginning, as is true for the rest of the nation. This has serious ramifications for the incidence of many common chronic diseases and health care expenses.

Source: MassCHIP database, Massachusetts Department of Public Health

Percent of Elderly by Age Group in the Total Population in the US and Massachusetts (1990 and 2004)

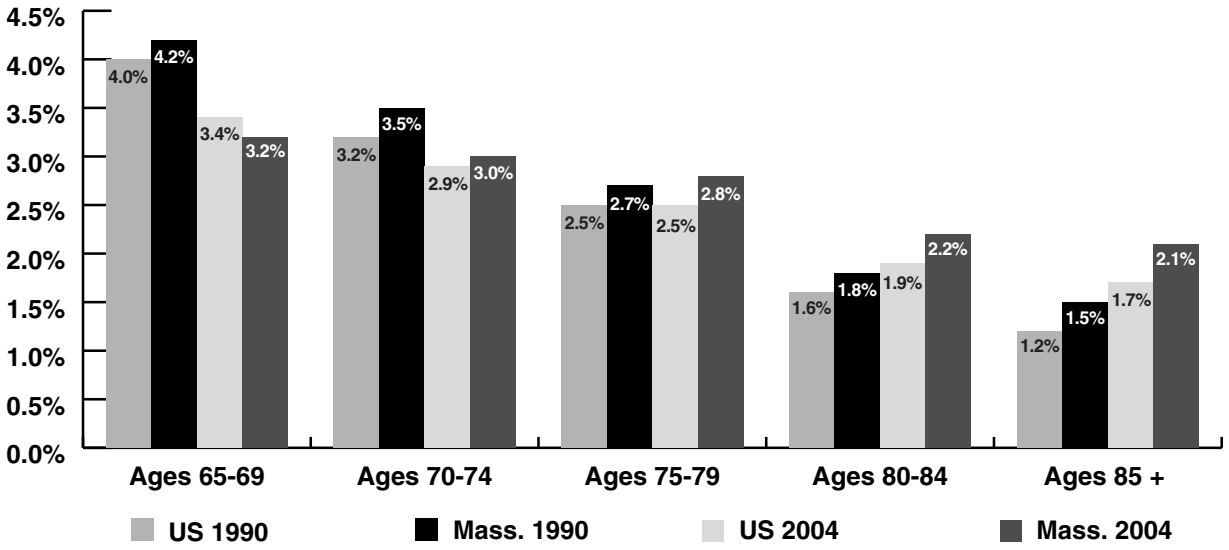


Figure 4.6

- The older population of the United States and Massachusetts is growing.
- Massachusetts has a greater proportion of residents in each age category over age 75 than the US as a whole. Massachusetts is an older-than-average state; it's 85-and-older population has grown, especially over the last 14 years.
- See Figure 1.8 on page 13 for population in all age categories.

Sources: "Population Estimates for the US, Regions, Divisions, and States by 5-Year Age Groups and Sex: Time Series Estimates, July 1, 1990 to July 1, 1999 and April 1, 1990," US Bureau of Census; "Population Estimates for 2004," Table: PCT, Summary File 2, Sex by Age, US Bureau of Census

Age-Adjusted Death Rates by Gender in the US and Massachusetts (1990 and 2002)

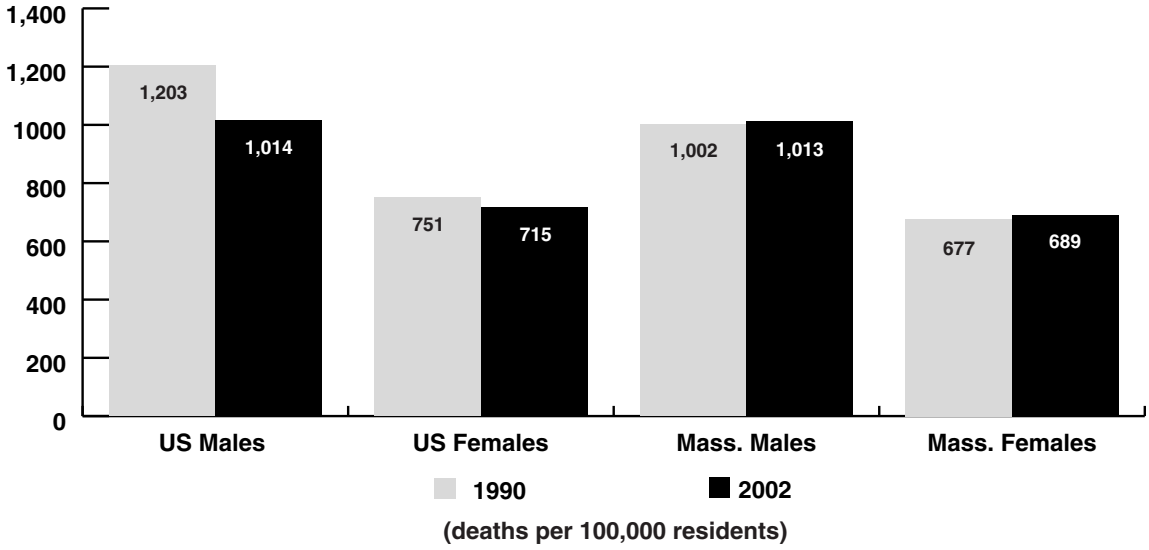


Figure 4.7

- Females have a far lower age-adjusted death rate than males.

Sources: *Health, United States, 2004,* US Department of Health and Human Services; *Massachusetts Deaths 2002,* Massachusetts Department of Public Health

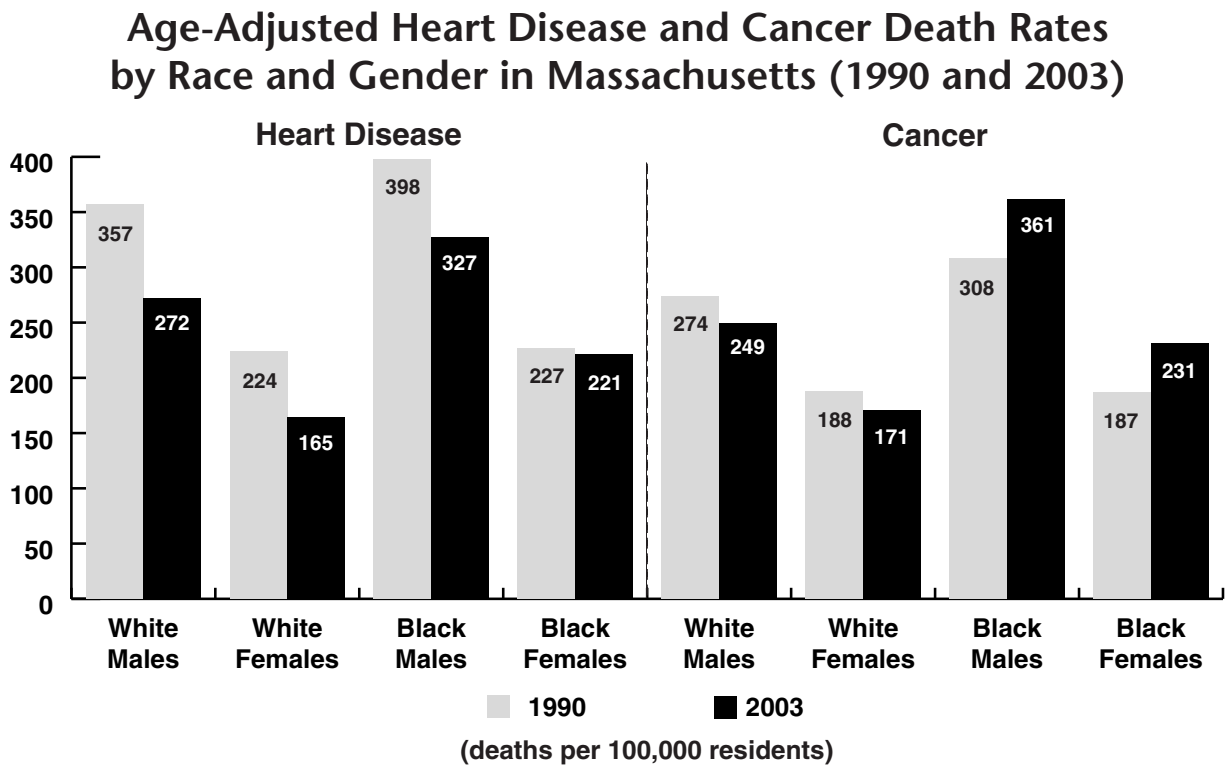


Figure 4.8

- Heart disease and cancer continued to be the first and second leading causes of death among Massachusetts residents in 2003, but have declined since 1990, except for cancer deaths in black males and females.

- Since 1990, age-adjusted heart disease rates have declined markedly among white men and women and black men in Massachusetts.

Source: *Massachusetts Deaths 2003,* Massachusetts Department of Public Health

Birth Rate by Age of Mother in the US and Massachusetts (1990 and 2002)

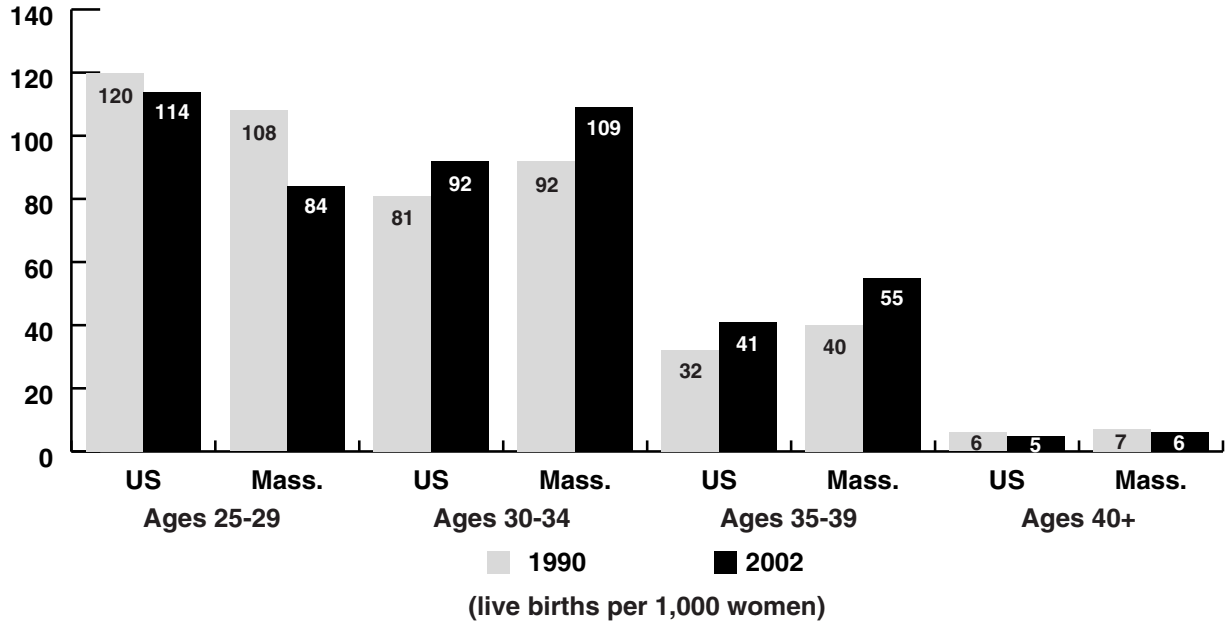


Figure 4.9

- Women over age 30 have experienced increased birth rates in Massachusetts and the US. In 1995, the birth rate for Massachusetts women ages 30-44 surpassed the rate for women younger than age 30 for the first time in Massachusetts history (not shown).

- In the younger age category, ages 25-29, Massachusetts had a lower birth rate in 2002 than the country as a whole, as it did in 1990, but it dropped more severely in Massachusetts than it did in the US over time.

Sources: *Health, United States, 2004,* US Department of Health and Human Services; *Massachusetts Births 2002,* Massachusetts Department of Public Health

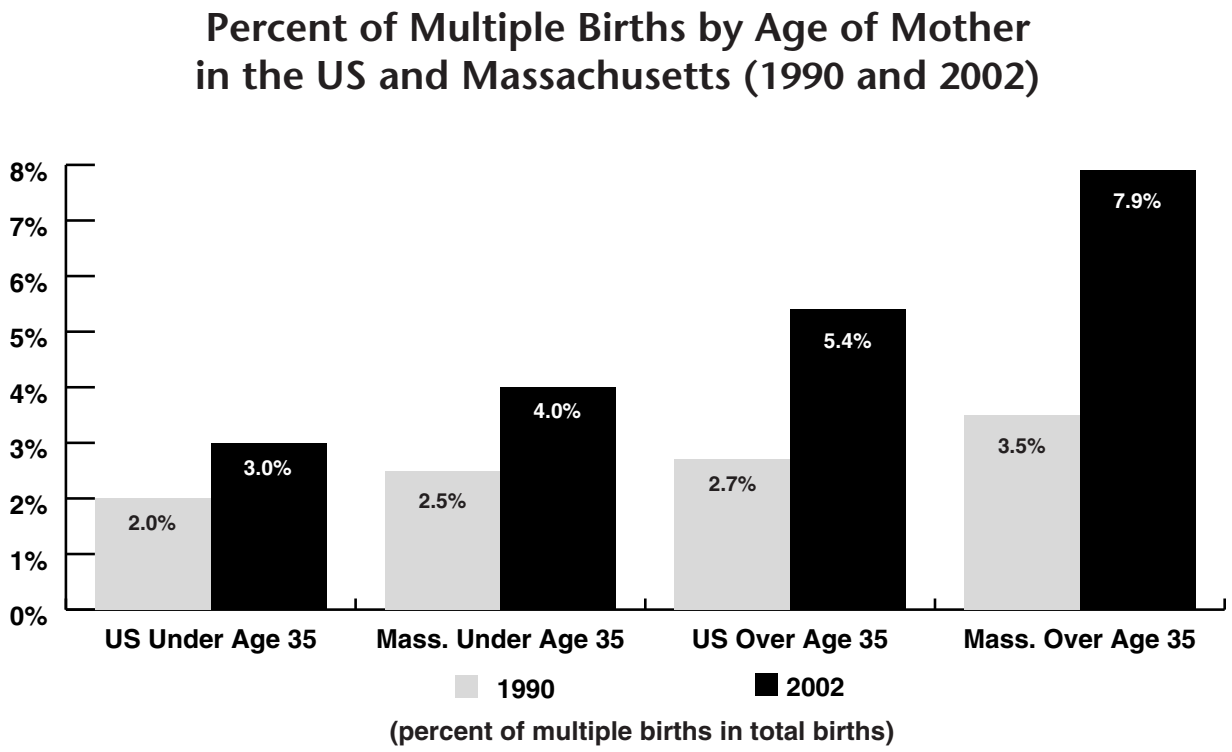


Figure 4.10

- For Massachusetts women under age 35, the percentage of multiple births increased from 2.5% in 1990 to 4% in 2002, an increase of 60%. Among women ages 35 and over, the percentage of multiple births more than doubled during this time period and was far higher than in the US as a whole.

- This proliferation in multiple births has adversely affected Massachusetts' low birth weight rate which is increasing (see Figure 4.4 on page 66). The increase in multiple births can be attributed to an increase in the age of mothers giving birth and the use of fertility-enhancing therapies. Massachusetts mandates that in-vitro fertilization be a covered benefit in health plans sold in this state (see Figure 2.4 on page 24).

Sources: *Health, United States*, 2004, US Department of Health and Human Services; *Massachusetts Births 2002,* Massachusetts Department of Public Health

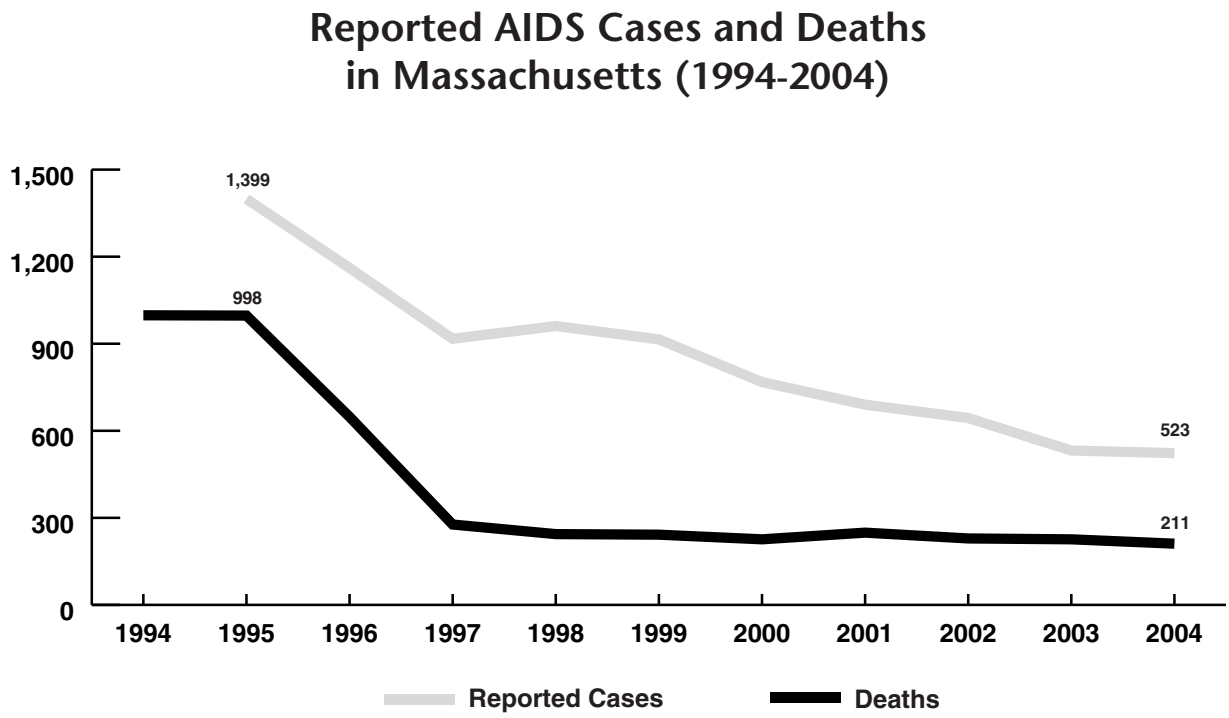


Figure 4.11

- Reported cases of AIDS in Massachusetts have declined dramatically from 1,399 cases in 1995 to 523 cases in 2004.
- The number of individuals who died from AIDS in Massachusetts has also declined significantly from 998 deaths in 1994 to 211 deaths in 2004.

Sources: For reported cases: Massachusetts Department of Public Health, *HIV/AIDS Surveillance Program.* The Massachusetts HIV/AIDS Epidemic at a Glance, Table 21, www.mass.gov/dph/aids/research/profile2005/epidemic_appendix.pdf
For death information: Massachusetts Department of Public Health, *Massachusetts Deaths 2004*, Table 17a

HIV/AIDS Death Rates for Men Ages 25-44 by Race and Ethnicity in Massachusetts (1994-2004)

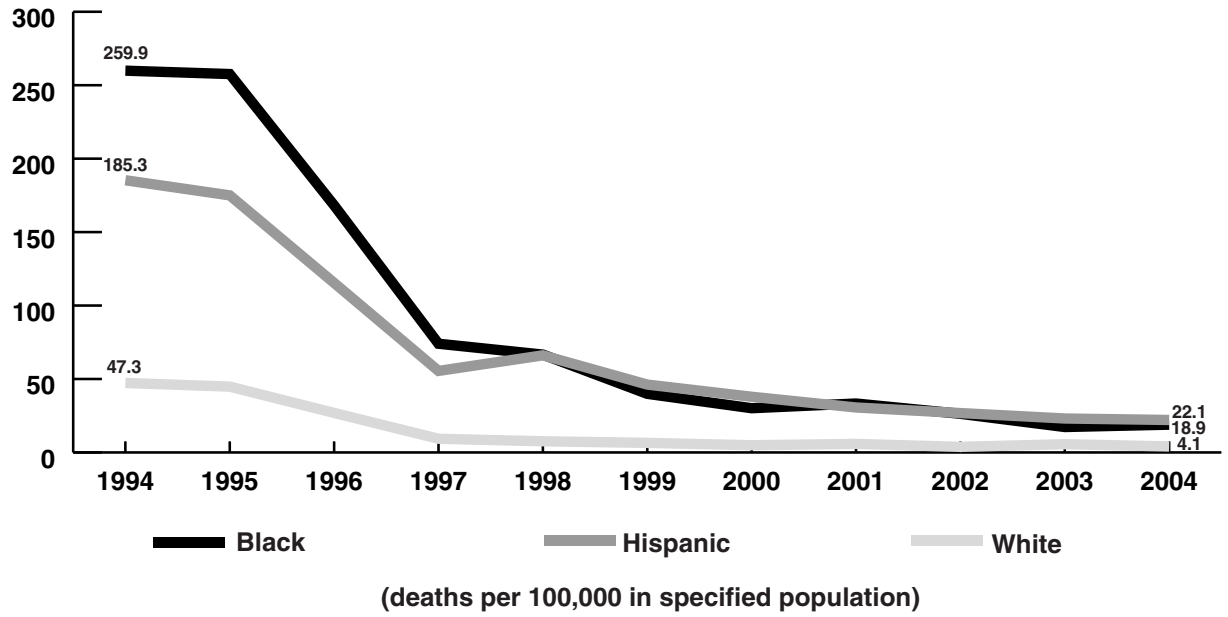


Figure 4.12

- AIDS death rates have seen a much more dramatic fluctuation over the decade for individuals of color than for whites. In fact, the decrease in number of deaths due to AIDS, illustrated in Figure 4.11 on page 73, is largely attributable to the dramatic decline in deaths among blacks and Hispanics.

Source: *Massachusetts Deaths 2004*, Massachusetts Department of Public Health, Table 18.

HIV/AIDS Death Rates for Women Ages 25-44 by Race and Ethnicity in Massachusetts (1994-2004)

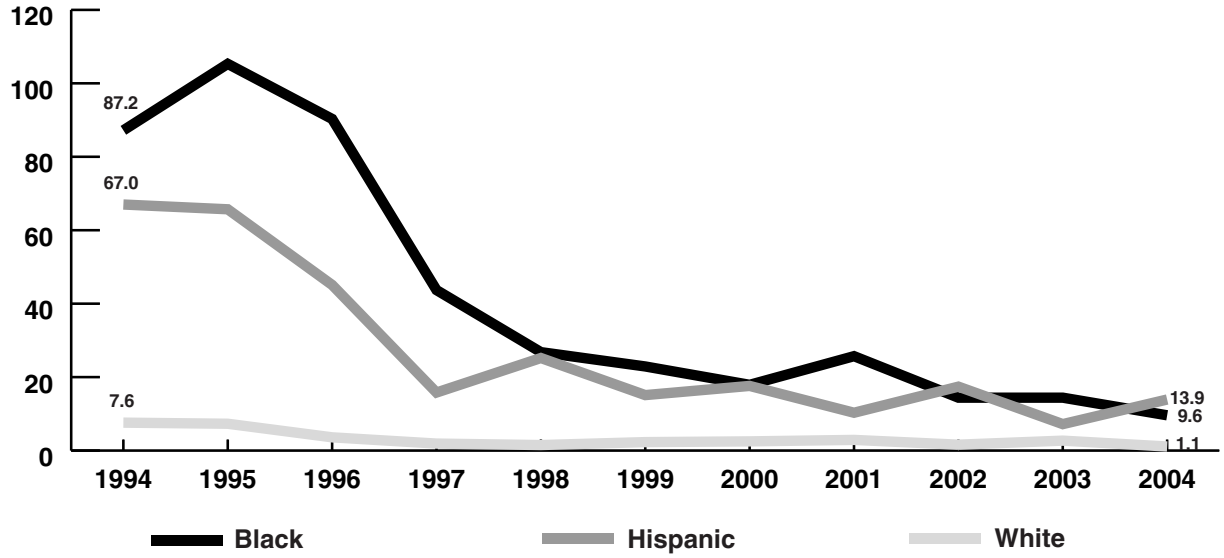
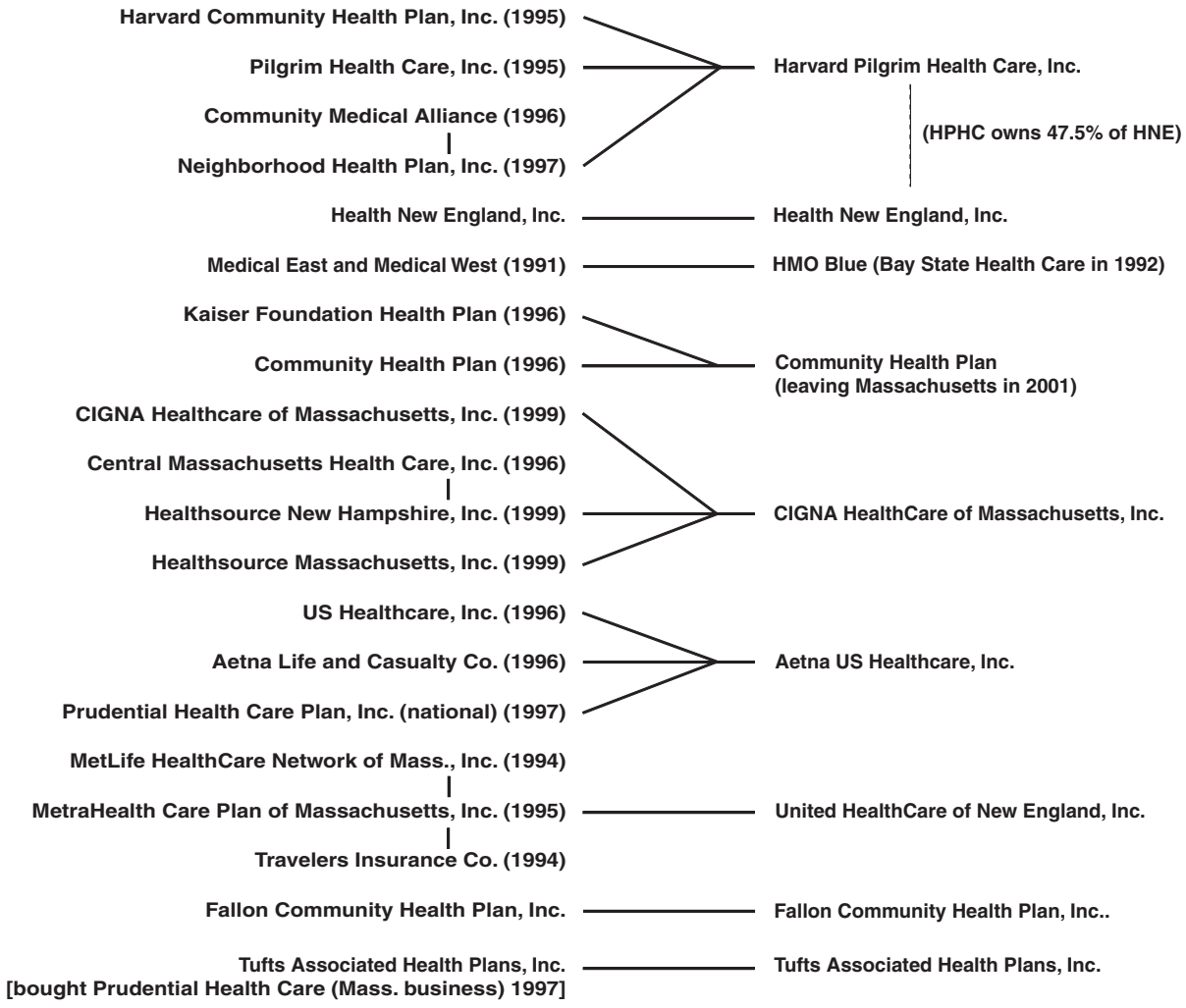


Figure 4.13

- As with men, black and Hispanic women are far more likely to die of AIDS than white women.
- The trend was fairly stable for white women, while the death rate declined substantially for minority women.

Source: *Massachusetts Deaths 2004,* Massachusetts Department of Public Health, Table 18

Appendix II: HMO Consolidation Chart (1990-2000)



Sources: *The Boston Globe*; *Boston Business Journal*; *Business Insurance*; Massachusetts Association of HMOs web site; *The New York Times*; *Monday Report*, Massachusetts Hospital Association; Massachusetts Division of Insurance

Appendix III: Hospital Systems (2006)

Baystate Health Systems
- Baystate Medical Center
- Franklin Medical Center
- Mary Lane Hospital

Berkshire Health Systems
- Berkshire Medical Center
- Fairview Hospital

Cape Cod Health Systems
- Cape Cod Hospital
- Falmouth Hospital

CareGroup Health Care System
- Beth Israel Deaconess Medical Center
- Beth Israel Deaconess Hospital
  - Needham Campus
- Mount Auburn Hospital
- New England Baptist Hospital

Caritas Christi Health Care
- Caritas Carney Hospital
- Caritas Good Samaritan Medical Center
- Caritas Norwood Hospital
- Caritas Holy Family Hospital
- Saint Anne's Hospital
- Caritas Saint Elizabeth's Medical Center

Essent
- Merrimack Valley
- Nashoba Valley Medical Center

Hallmark Health
- Lawrence Memorial Hospital
- Melrose-Wakefield Hospital

Partners HealthCare
- Brigham & Women's Hospital
- Faulkner Hospital
- Massachusetts General Hospital
- McLean Hospital
- Newton-Wellesley Hospital
- North Shore Medical Center

Source: Massachusetts Hospital Association web site: http//www.mhalink.org; Division of Health Care Finance and Policy; Baystate Health Systems, www.baystatehealth.com; Berkshire Health Systems, www.berkshirehealthsystems.com; CareGroup, Inc., www.caregroup.org; Caritas Christi Health Care System, www.caritaschristi.com; Hallmark Health Corporation, hallmarkhealth.org; Partners HealthCare System, Inc., www.partners.org; UMass Memorial Health Care, www.umassmemorial.org

UMass Memorial Health Care

Clinton Hospital
HealthAlliance Hospitals
Marlborough Hospital
UMass Memorial Medical Center
Wing Memorial Hospital

Metrowest Medical Center

Framingham Union Hospital
Leonard Morse Hospital

Appendix IV: Acute Hospital Full Asset Mergers (1990-2004)

1990 Medical Center of Central Mass, later Memorial Health Care (Worcester Memorial, Worcester Hahnemann, and Holden Hospitals)
1990 Salem Hospital (North Shore Children's and Salem Hospitals)
1992 Metrowest Medical Center (Framingham Union and Leonard Morse Hospitals)
1992 Saints Memorial (Saint John's and Saint Joseph's Hospitals)
1993 Good Samaritan (Cardinal Cushing and Goddard Memorial Hospitals)
1994 Health Alliance (Leominster and Burbank Hospitals)
1995 Lahey Hitchcock Clinic (Lahey Clinic and Mary Hitchcock Clinic (NH))
1996 Berkshire Medical Center (Berkshire Medical Center and Hillcrest Hospital)
1996 Beth Israel Deaconess Medical Center (NE Deaconess and Beth Israel Hospitals)
1996 Boston Medical Center (University and Boston City Hospitals)
1996 Cambridge Community Health Network (Cambridge and Somerville Hospitals)
1996 Cape Cod Health Systems (Cape Cod and Falmouth Hospitals)
1996 Northeast Health Systems (Beverly and Addison Gilbert Hospitals)
1996 Southcoast Health System (Charlton Memorial, Saint Luke's, and Tobey Hospitals)
1996 UniCare Health System (Melrose-Wakefield and Whidden Memorial Hospitals)
1997 Hallmark Health System Inc. (Lawrence Memorial Hospital, Malden Medical Center, and UniCare Health System)
1997 Mercy (Mercy and Providence Hospitals)
1998 UMass Memorial Medical Center (Memorial Health Care and UMass Medical Center)
2001 Cambridge Health Alliance (Cambridge, Somerville, Whidden and Malden's 42 psych beds)
2001 Hallmark Health now only Melrose-Wakefield and Lawrence Memorial
2002 CareGroup sold Deaconess-Waltham to a private developer who leases the facility back to Waltham Hospital (new name)
2002 Deaconess-Glover now under a new parent: Beth Israel Deaconess Hospital (was under CareGroup parent)
2004 North Shore Medical Center merges with Union Hospital

Sources: Massachusetts Hospital Association web site: http://www.mhalink.org; Division of Health Care Finance and Policy; Office of the Attorney General

Appendix V: Hospital Closures as Acute Inpatient Facilities (1990-2006)

1990 Holden Hospital
1990 Hunt Memorial Hospital
1990 Massachusetts Osteopathic Hospital
1990 Saint Luke's Middleborough Hospital
1991 Worcester City Hospital
1993 Amesbury Hospital
1993 Saint Margaret's Hospital for Women
1994 Heritage Hospital
1994 Ludlow Hospital
1994 Saint Joseph's Hospital
1994 Winthrop Community Hospital
1996 Lynn Hospital
1996 Goddard Memorial Hospital
1996 Providence Hospital
1997 Burbank Hospital
1997 Dana Farber Cancer Institute
1999 Boston Regional Medical Center
1999 Malden Hospital
1999 Symmes Hospital
2003 Waltham Hospital

Sources: Massachusetts Hospital Association web site: http://www.mhalink.org; Division of Health Care Finance and Policy; Office of the Attorney General

Appendix VI: Hospital Acquisitions (1990-2006)

1990 Beverly Hospital purchase of Hunt Memorial Hospital
1990 Cardinal Cushing Hospital purchase of Saint Luke's Middleborough Hospital
1992 Lahey Clinic purchase of J.B. Thomas Hospital
1993 Transitional Hospitals Corp. purchase of J.B. Thomas Hospital (for-profit)
1994 Boston University Medical Center and East Boston Neighborhood Health Center acquisition of Winthrop Hospital
1994 Lahey Clinic (50%) and New England Rehabilitation Hospital (50%) acquisition of Symmes Hospital
1994 Vencor, Inc. purchase of Boston Hahnemann Hospital (for-profit)
1995 Memorial Health Care acquisition of Clinton Hospital
1996 Columbia/HCA purchase of Metrowest Medical Center (for-profit)
1996 Memorial Health Care acquisition of Marlborough Hospital
1996 OrNda HealthCorp purchase of Saint Vincent Hospital (for-profit)
1996 Tenet purchase of St. Vincent's (for-profit)
1997 Caritas Christi purchase of Carney Hospital
1997 Caritas Christi acquisition of Neponset Valley Health Systems (Norwood)
1997 Lifespan acquisition of New England Medical Center
1997 Tenet Healthcare Corp acquisition of OrNda HealthCorp
1997 Vencor purchase of Transitional Hospitals Corp. (formerly J.B. Thomas Hospital)
1998 UMass Memorial Medical Center acquisition of HealthAlliance
1999 Tenet Healthcare Corp 80% acquisition of Metrowest Medical Center (for-profit)
2001 Cambridge Health Alliance acquisition of Whidden and Malden's 42 psych beds
2001 Essent acquisition of Hale (Haverhill) Hospital and name change to Merrimack Valley Hospital
2001 Vencor Boston and Vencor North Shore recover from bankruptcy and change names to Kindred Boston and Kindred North Shore
2002 Deaconess-Waltham no longer a part of CareGroup; changes name to Waltham Hospital
2003 Essent buys Deaconess-Nashoba; new name is Nashoba Valley Medical Center
2003 Deaconess-Glover becomes BI Deaconess-Needham Campus under the parent BI Deaconess Hospital, but is still a hospital in its own right
2005 Vanguard purchase of St. Vincent and Metrowest Medical Center from Tenet
2006 Kindred buys Northeast Specialty and Parkview Specialty; new names are Kindred Hospital Northeast and Kindred Hospital Parkview

Sources: Massachusetts Hospital Association web site: http://www.mhalink.org; Division of Health Care Finance and Policy; Office of the Attorney General

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